

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF HAWAII

In the Matter of

PUBLIC UTILITIES COMMISSION

Instituting a Proceeding to Investigate the
Implementation Of Feed-in Tariffs.

DOCKET NO. 2008-0273

OPENING BRIEF OF BLUE PLANET FOUNDATION
AND
CERTIFICATE OF SERVICE

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Blue Planet Foundation ("Blue Planet"), by and through its attorneys Schlack Ito Lockwood Piper & Elkind, hereby respectfully submits its Opening Brief in support of its position in this proceeding to investigate the implementation feed-in tariffs ("FIT").¹

I. INTRODUCTION

The fundamental issue before the Commission in this proceeding is whether and to what extent Hawaii will use FITs to "move more decisively and irreversibly away from imported fossil fuel for electricity and transportation and towards indigenously produced renewable energy," given the challenges associated with Hawaii's dependence on imported oil and the opportunities presented by Hawaii's swift transition to a clean energy economy.² A robust FIT, capable of securing the rapid adoption of the maximum feasible amount of renewable energy, is a reasonable and appropriate method to address these profound challenges and opportunities regarding Hawaii's energy future.

¹ Blue Planet's Opening Brief is timely filed in accordance with the June 12, 2009 due date established by the Commission's letter to the parties dated May 21, 2009. *Id.* at 2.

² *Energy Agreement Among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies* dated Oct. 20, 2008 at 1 ("Energy Agreement").

The challenges to Hawaii's energy future stem from the state's dangerous over-reliance on imported oil for transportation and electricity production. Nearly 77% of the state's electricity and about 95% of its transportation fuels are produced from petroleum. State of Hawaii Energy Resources Coordinator Annual Report (2008) at 1.³ The parties to the Energy Agreement have affirmed that "[t]he very future of our land, our economy and our quality of life is at risk" if Hawaii's dangerous dependence on imported oil is not alleviated. Energy Agreement at 1 (emphasis added). The State Legislature has found:

The global demand for petroleum and its derivatives has caused severe economic hardships throughout the State and threatens to impair the public health, safety and welfare. The State of Hawaii, with its total dependence on imported fossil fuel, is particularly vulnerable to dislocations in the global energy market.

Haw. Rev. Stat. § 196-1(1) (emphasis added); *see also* 2008 Haw. Sess. Laws, Act 208 at § 1 (Hawaii's "high petroleum dependence makes consumers extremely vulnerable to any oil embargo, supply disruption, international market dysfunction, and many other factors beyond Hawaii's control") (emphasis added). Indeed, as Theodore Liu, Director of the State of Hawaii Department of Business, Economic Development, and Tourism, and the State's Energy Resources Coordinator, has affirmed, Hawaii is "the most insecure state in the U.S. because so much of our energy is shipped in [and] we spend close to 10 percent of our GDP shipping money to foreign countries for oil[.]" R. Boyd, *Hawaii Says Aloha (Greetings) to Clean, Renewable Energy*, Scientific American (June 1, 2009).⁴

These challenges are matched by equally significant economic and environmental opportunities from a clean energy economy in Hawaii. Importantly, a robust FIT should result in lower energy costs to ratepayers in the long run; as the Energy Agreement has concluded, "the

³ Available at <http://hawaii.gov/dbedt/info/energy/publications/erc08.pdf>.

⁴ Available at <http://www.scientificamerican.com/article.cfm?id=hawaii-renewable-energy>.

benefits to Hawaii from using a feed-in tariff to accelerate renewable energy development (from lowering oil imports, increasing energy security, and increasing both jobs and tax base for the state), exceed the potential incremental rents paid to the renewable providers in the short term.” Energy Agreement at 16-17. The HCEI MOU⁵ contemplates “significant . . . economic growth opportunities.” *Id.* at 1 (emphasis added). One of an FIT’s “key goals” is to “build the workforce with crosscutting skills to enable and support a clean energy economy.” *Id.* at 1 (emphasis added).

Blue Planet’s vision is one of diverse interests uniting around a common goal: Hawaii’s swift transition to a clean energy economy. This transition is already underway. As Governor Lingle declared regarding the historic Hawaii Clean Energy Initiative, “[o]ur islands’ abundant natural sources of energy, combined with the considerable capabilities of the Department of Energy, will help Hawai’i lead America in utilizing clean, renewable energy technologies.” State of Hawaii Office of the Governor, *Hawai’i and U.S. Department of Energy Partner to Make Hawai’i a “World Model” For Clean Energy Economy* (Jan. 28, 2008).⁶ Through this proceeding, Hawaii is poised to become one of the first states in the nation to adopt a robust FIT intended to stimulate significant amounts of renewable energy.⁷

As explained more fully below, the facts and law demonstrate that it is both reasonable and appropriate for the Commission to adopt general principles and an FIT that is capable of securing the rapid adoption of the maximum feasible amount of renewable energy. By doing so, Hawaii can confront the challenges of its dangerous over-reliance on imported oil

⁵ Memorandum of Understanding Between the State of Hawaii and the U.S. Department of Energy dated Jan. 28, 2008 (“HCEI MOU”).

⁶ Available at <http://hawaii.gov/gov/news/releases/2008/hawaii-and-u.s.-department-of-energy-partner-to>.

⁷ P. Gipe, *Vermont FITs become Law: The Mouse That Roared* (May 28, 2009), available at <http://www.wind-works.org/FeedLaws/USA/VermontFITsBecomeLawTheMouseThatRoared.html> (describing Vermont feed-in tariff legislation that became law on May 27, 2009).

and exploit the economic opportunities associated with a world-wide shift toward sustainability, thereby helping to fulfill the basic commitments expressed in the Hawaii Clean Energy Initiative and the Energy Agreement.

II. PROCEDURAL BACKGROUND

A. Opening Brief and Decisions on General Principles.

This Opening Brief is intended to support and assist the Commission's evaluation and determination of "General Principles" concerning FIT design. On April 27, 2009, the Commission issued its order amending the schedule in this proceeding, which establishes certain procedures and activities to be undertaken in the remainder of this proceeding.⁸ Following submission of Opening and Reply Briefs by the parties, the Commission is to issue its "Decision on General Principles" in August 2009. *Id.* The procedural schedule contemplates "Settlement discussions to apply the PUC principles to actual tariffs," followed by the "Filing of Proposed Tariffs (and Standard Contract) and Alternative Tariff," with the parties comments on the proposed tariffs shortly thereafter. *Id.*

Accordingly, this Opening Brief focuses on the General Principles at issue, with the understanding that the procedural schedule provides for further discussion and written submissions on more detailed issues in subsequent further settlement discussions and the preparation and review of tariff sheets and standard contracts. This Opening Brief does attempt to address, to the extent reasonably possible, the questions and concerns set forth in the Commission's revised Statement of Issues;⁹ the "Panel Topics, Commission Decisions, and General Hearing Questions" contained in Exhibit A to the Commission's April 1, 2009 Order;

⁸ Order Granting the County of Hawaii's Motion for Approval to Amend Its Status as an Intervener to a Participant, Filed on April 8, 2009; Granting the City and County of Honolulu's Motion for Approval to Amend Its Status as an Intervenor to a Participant, Filed on April 8, 2009; Amending Hawaii Holdings, LLC, Doing Business as First Wind Hawaii and Semptra Generation's Status as Intervenor to Participants; and Amending the Schedule in This Proceeding filed April 27, 2009 at 11.

⁹ See Order Establishing Hearing Procedures filed April 1, 2009 at 6.

the "Legal Questions" document dated April 16, 2009 provided by the Commission in conjunction with the April 13-17, 2009 Panel Hearing in this matter ("Panel Hearing");¹⁰ and the May 7, 2009 National Regulatory Research Institute Questions provided by the Commission ("May 7, 2009 NRRI Questions").¹¹

In addition, Blue Planet has also prepared brief written responses to the May 7, 2009 NRRI Questions in a separate document, attached as Exhibit A. Blue Planet has also attached to this Opening Brief its Proposed Feed-in Tariff ("Proposed FIT") as Exhibit B.¹²

B. Blue Planet's Preferred Clean Energy Goals.

Blue Planet's positions on the issues in this proceeding reflect not only its analysis of the facts and law, but also its organizational mission, informal network of energy policy experts, and obligation to its supporters. As a leading clean energy public interest organization in Hawaii, with over 5,000 registered "Friends of Blue Planet," Blue Planet is dedicated to promoting Hawaii's swift transition to a clean energy economy through the rapid adoption of renewable energy and increased energy efficiency.

Blue Planet is a local non-profit that wants to end the use of carbon-based fuels on Earth by making Hawai'i a role model for energy independence within a decade. We're building a clean energy movement in Hawai'i, shaping new policy at the State Capitol, and providing smart energy solutions to residents statewide.

We believe that Hawai'i can prove to the world that prosperity doesn't depend on coal or oil. We want to find solutions that are

¹⁰ It is noted that the sections VI ("General Questions") and VIII ("Sellers' Legal Rights") of the May 7, 2009 NRRI Questions include, and amend as appropriate based upon the Panel Hearing transcript, the questions set forth in the April 16, 2009 "Legal Questions" document. See Transcript at V-146-165.

¹¹ Electronic mail from S. Kawasaki-Djou, Esq. to parties dated May 7, 2009.

¹² With regard to rates under the table columns labeled "Feed-in Tariff Rate (\$/kW hour)" on pages 6-10 of the Proposed FIT, Blue Planet respectfully reserves the right to comment on rates in the further course of this proceeding. In general, Blue Planet favors rates targeted to ensure that the primary policy objectives of the Energy Agreement are achieved. With regard to the references throughout the Proposed FIT to various appendices and exhibits, Blue Planet's position is that any differences between Proposed FIT and Straw FIT appendices and exhibits should at the appropriate time be resolved in a manner that conforms to the Proposed FIT.

appropriate to place and have minimum impact on the environment. Efficiency first—then tapping into clean, local, renewable energy solutions, like solar, wind and ocean energy.

Blue Planet Foundation, “Legislative Review” (May 2009) at 1.

In April 2008, Blue Planet hosted a three-day “Global Energy Summit” on Oahu with over seventy-five participants, including some of the world’s leading experts in renewable energy science and policy. Participants in the summit and/or members of Blue Planet’s Board of Directors or Board of Advisors include Stephen Schneider, Ph.D., Stanford University, Member of the U.N. Intergovernmental Panel on Climate Change; William P. Parks, Jr., Deputy Assistant Secretary, Research and Development, U.S. Department of Energy; Maurice H. Kaya, P.E., former Chief Technology Officer, State of Hawaii; Richard E. Rocheleau, Director, Hawaii Natural Energy Institute, University of Hawaii; Dr. Peter E. Crouch, Dean of the College of Engineering at the University of Hawaii; Devon L. Manz, Energy Systems Engineer, GE Global Research; and Ted G. Johnson, Ph.D., Lockheed-Martin Alternative Energy Program.

Blue Planet is actively engaged in legislative efforts, public outreach and education, and regulatory proceedings to secure the environmental and economic benefits of a clean energy future for Hawaii’s citizens and establish Hawaii as a global leader in energy self reliance. In addition to this proceeding, Blue Planet is an intervenor party in the decoupling proceeding (Docket No. 2008-0274), and recently has filed motions to intervene in the PV Host Program (Docket No. 2009-0089) and Clean Energy Scenario Planning (Docket No. 2009-0108) proceedings.

Importantly, although Blue Planet acknowledges the value of and supports the HCEI goal of 70% clean energy by 2030, Blue Planet favors the goal of achieving 100% fossil fuel-free Hawaii within a decade, or by 2020.

III. THE COMMISSION SHOULD ADOPT GENERAL PRINCIPLES BASED UPON THE FEED-IN TARIFF POLICY OBJECTIVES.

A. Feed-in Tariff Policy Objectives Establish Decision-Making Criteria for the Commission's Decisions on General Principles.

Commission decisions on general principles governing the FIT must be supported by evidence and also made by reference to reasonable and justifiable criteria. Such criteria are found in the economic and environmental policy objectives associated with the adoption of an FIT in Hawaii, as set forth in the Energy Agreement and related State and federal energy law and policy documents ("FIT Policy Objectives"). Simply stated, the Commission should adopt general principles likely to achieve the broad policy objectives of an FIT. Such policy objectives provide a sound basis for ensuring that the Commission's decisions on general principles are consistent with the Energy Agreement and achieve the important economic and environmental goals of an FIT in Hawaii.

B. General Principles and the FIT Should Be Supported by the Required Standard of Evidence.

The standard of evidence employed by the Commission in this proceeding, for determination of general principles guiding the FIT design, the FIT schedule, cost information in support of proposed FIT payment rates, and other matters in this proceeding should not differ from the "substantial evidence" standard established under section 91-1, Hawaii Revised Statutes. That standard requires "such evidence as a reasonable mind might accept as adequate to support a conclusion." Op. Atty. Gen. No. 76-1 (1976).

It is well established that an agency's findings, if supported by reliable, probative and substantial evidence, will be upheld. *In re Gray Line Hawai'i, Ltd.*, 93 Haw. 45, 53 (2000). Under Hawaii law, "[s]ubstantial evidence means credible evidence of sufficient quantity and probative value to justify a reasonable man in reaching a conclusion." *Hong v. Kong*, 5 Haw.

App. 174, 174,683 P.2d 833, 835 (1984). The substantial evidence standard of review applied to agency's factual findings "does not require or specify a quantity of evidence but requires only such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. . . . [S]ubstantial evidence is somewhat less than and does not mean, nor is it equated with, a preponderance of evidence." 73A C.J.S. *Public Administrative Law and Procedure* § 448 (2004).

C. Rapid Adoption Objective.

The Commission should adopt general principles that are most likely to achieve the rapid adoption of the maximum feasible amount of renewable energy in Hawaii ("Rapid Adoption Objective"). The Rapid Adoption Objective is fundamental to an FIT and a defining feature of successful FITs in Europe and North America. *See, e.g.,* KEMA, Inc., "HECO Feed-in Program Plan" (Dec. 2008) ("KEMA Report") at 55-61.

Hawaii law promotes and requires objectives consistent with the Rapid Adoption Objective. The Constitution of the State of Hawaii, Article XI, "Conservation and Development of Resources," promotes the development of renewable energy:

For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State.

Id. (emphasis added).

A significant number of Hawaii's energy-related statutes similarly require and promote the rapid adoption of the maximum feasible amount of renewable energy. It is appropriate and reasonable for the Commission to consider these laws as providing guidance on the adoption of general principles in this proceeding, especially given the scope and relatively

large number of such laws. *See, e.g.*, Haw. Rev. Stat. § 46-19 (counties may participate in the development of alternative energy resources); Haw. Rev. Stat. § 46-19.4 (agencies shall provide priority handling and processing of county permits required for renewable energy projects); Haw. Rev. Stat. § 196-1 (finding an immediate need to formulate plans for the development and use of alternative energy sources); Haw. Rev. Stat. § 196-1.5 (agencies shall provide priority handling and processing of state permits required for renewable energy projects); Haw. Rev. Stat. § 196-41 (State of Hawaii Department of Land and Natural Resources and Department of Business, Economic Development and Tourism shall facilitate the private sector's development of renewable energy projects); Haw. Rev. Stat. § 201-12 (DBEDT shall develop a state program for the efficient development of new or alternative sources of energy); Haw. Rev. Stat. § 201-12.5 (establishing within DBEDT the position of renewable energy coordinator to facilitate renewable energy development); Haw. Rev. Stat. ch. 201N (establishing a renewable energy facility siting process); Haw. Rev. Stat. § 226-18 (it shall be State policy to "promote the use of renewable energy sources"); Haw. Rev. Stat. § 269-27.2 (promoting utilization of electricity generated from no fossil fuels); and Haw. Rev. Stat. ch. 269 Parts V and VI (establishing renewable portfolio standards and net energy metering).

On April 17, 2009, a Senate Concurrent Resolution concerning FITs was adopted expressing "support for promoting and accelerating the increased use and development of renewable power generation" through FITs, and specifically urging the Commission to adopt and implement "true feed-in tariffs for clean energy systems up to twenty megawatts in size." S. Res. 23, S.D. 1, 25th Leg. Reg. Sess. (2009). The resolution further expressed support for the continuation of net energy metering "in tandem" with FITs. *Id.*

Consistent with Hawaii law, the HCEI MOU and Energy Agreement establish the Rapid Adoption Objective and require the adoption of an FIT in Hawaii that is likely to achieve this fundamental policy objective.

- The MOU estimates that “Hawaii can potentially meet between 60 and 70 percent of its future energy needs from clean, renewable energy sources.” *Id.* at 1 (emphasis added).
- The Energy Agreement parties commit to the goal of “70 percent clean, renewable energy for electricity and transportation by 2030[.]” *Id.* at 18 (emphasis added).
- The Energy Agreement affirms that “[t]he future of Hawaii requires that we move more decisively and irreversibly away from imported fossil fuel for electricity and transportation and towards indigenously produced renewable energy and an ethic of energy efficiency. *Id.* (emphasis added).
- The Energy Agreement parties agree to “implement feed-in tariffs as a method for accelerating the acquisition of renewable energy[.]” *Id.* at 17 (emphasis added).
- The parties commit to “accelerate the adoption of” distributed generation and distributed energy storage. *Id.* at 27 (emphasis added).
- The parties commit to integrate “the maximum attainable amount of wind energy on their systems.” *Id.* at 3 (emphasis added).
- The parties agree that the HECO Companies¹³ “are responsible for expeditiously integrating customer-sited PV and CSP energy into the utility system[.]” *Id.* at 12 (emphasis added).
- The parties affirm that “[t]he very future of our land, our economy and our quality of life is at risk if we do not make this move and we do so for the future of Hawaii and of the generations to come.” *Id.* (emphasis added).

The HCEI White Paper¹⁴ similarly establishes that the purpose of an FIT in Hawaii should be to achieve the Rapid Adoption Objective.

¹³ Hawaiian Electric Company, Inc.; Maui Electric Company, Limited; and Hawaii Electric Light Company, Inc.

An interesting comparison of PV penetration can be seen from Germany as compared to California. Between 1996 and December 31, 2006, Californians placed 198 MW of PV systems on the roofs of their homes, businesses, government, and schools; in the same period, Germany installed 2700 MW of PV capacity using enhanced FITs. The RE generated by these installations rose 60% in 2007 compared with 2006. This achievement is underscored by the fact that Germany gets an average of only 1,528 hours of sunshine a year, comparable to London's but one-third fewer sunshine hours than in Florence, and only half of San Diego's.

Id. at 12 (emphasis added). The HCEI White Paper notes that Spain's FITs "were responsible for rapid growth in wind power[.]" *Id.* at 14, and that a revised FIT for wind in Portugal had a "strong and noticeable impact" with "installed wind capacity . . . growing exponentially since 1999." *Id.* at 16.

Finally, the KEMA Report also describes and promotes the Rapid Adoption Objective. The potential benefits of an FIT include "[r]apid renewable energy market growth." *Id.* at 1 (emphasis added). FIT payments "can rapidly grow renewable energy markets and achieve ambitious goals." *Id.* at 60 (emphasis added). FITs "can drive renewable energy development more rapidly than other policy types[.]" *Id.* at 2. (emphasis added). The German FIT law "triggered rapid and sustained renewable energy growth in Germany." *Id.* at 56 (emphasis added). And a similar FIT law in Spain resulted in the installation of 3,522 MW of wind energy in 2007 (a European record) and Spain's photovoltaic market grew by over 300%. *Id.* at 58.

D. Ratepayer Benefit Objective.

A primary reason for achieving the Rapid Adoption Objective by means of an FIT is to provide ratepayers with the cost savings associated with FITs. The Commission should therefore adopt general principles that are most likely to achieve, to the extent reasonably

¹⁴ D. Hinrichs, *Feed-in Tariff Case Studies: A White Paper in Support of The Hawaii Clean Energy Initiative* ("HCEI White Paper") at 7 (emphasis added).

possible, such cost savings for ratepayers ("Ratepayer Benefit Objective"). In essence, the Ratepayer Benefit Objective may be understood as the cost savings to ratepayers from lower electricity rates in conjunction with achievement of the Rapid Adoption Objective, assuming that over the long term the cost of electricity from imported oil is higher than the cost of electricity from indigenous renewable sources.

In the short term, it is possible that an FIT may result in a higher cost to ratepayers. The Scoping Paper notes that policymakers use FITs to encourage resource development "by compensating developers in excess of a market-based avoided cost." *Id.* at 5. Under an FIT, renewable energy generators are paid a "premium rate" that is designed to generate a reasonable profit which is "shared equitably by all grid customers." HCEI White Paper at 7.

Over the long term, however, an FIT may result in cost savings from reduced reliance on imported oil to generate electricity, assuming renewable energy is less costly. The record in this proceeding includes an analysis by an intervenor party concluding that the an FIT for solar photovoltaic energy will cost ratepayers less than imported oil over a twenty-year term.¹⁵ Similar testimony was offered at the Panel Hearing. Tr. IV-169:23-25 – IV-170:1-6. The State of Hawaii Department of Business, Economic Development, and Tourism ("DBEDT") has confirmed that renewable energy costs in Hawaii are "cost competitive with and often cheaper than non-renewable energy." See DBEDT Response to Scoping Paper Non-Legal Questions filed Jan. 26, 2009 at 8.

Such long-term cost benefits associated with the rapid and widespread adoption of renewable energy, through FITs and other mechanisms, are anticipated by the Energy

¹⁵ See The Solar Alliance's Responses to Information Requests from Hawaiian Electric Company and the Department of Business, Economic Development and Tourism Regarding Its Opening Statement of Position and Proposal for Feed-in Tariff Design, Policies and Pricing Methods filed Mar. 13, 2009 at HECO/Solar Alliance-IR-7.

Agreement. For example, the Energy Agreement parties “accept that the transition to this clean energy future will require significant public and private investment with impacts on Hawaii’s ratepayers and taxpayers and, we expect to achieve long-term benefits that outweigh the costs of such investments.” Energy Agreement at 1 (emphasis added). The parties agree to “strive to assure that this process to achieve the HCEI goals and objectives will be directed towards providing ratepayer benefits, including long term price stability, and ultimately lower cost than would be incurred using imported fossil fuels.” *Id.* Energy costs “may be higher at first, but in the long run can be more stable than with current volatile oil pricing.” Energy Agreement at 43 (emphasis added).

According to FIT authority Paul Gipe, the European Renewable Energy Federation suggests “it may be more cost-effective in the long term to stimulate rapid development of renewable technologies by paying high prices today to bring technology quickly down the learning curve than by slowly introducing the technology with timid measures that pay lower prices.” P. Gipe, Renewable Energy Policy Mechanisms (Feb. 17, 2006) at 28. An International Energy Agency study of renewable energy policy concluded incentives such as FITs “can lower renewable energy costs by 10 to 30 percent compared to other policy structures.” KEMA Report at 58 (emphasis added). The KEMA Report similarly acknowledges an FIT offers the benefits of the reduction of project developer costs, risks and complexity “without significantly increasing ratepayer cost.” KEMA Report at 1.

The ability of an FIT to achieve the Ratepayer Benefit is underscored by the cumulative additional net cost for the German FIT program, which has been estimated at approximately \$573 per person over a twenty-year period, or \$28.65 per year. HCEI White Paper at 33; *see also* M. Maedl, *The German FIT for Renewable Energy – A Bargain!* (April 14,

2008).¹⁶ With wind, solar, biomass, and other renewable energy capacity, Germany in 2006 derived 14.2% of its electricity from renewable energy sources with a 3-5% increase in electric rates to consumers. HCEI White Paper at 3. As of 2008, the increase of FIT payments for ratepayers in Germany has been \$.01 per kWh. *Id.* at 33.

E. Job Growth Objective.

The Commission should adopt general principles and an FIT that are most likely to stimulate the greatest increase in employment in Hawaii related to achievement of the Rapid Adoption Objective (“Job Growth Objective”). FITs are widely understood to stimulate job growth. The KEMA Report, for example, states:

Economic development and job creation: Renewable energy creates more jobs than other energy industries and also has a higher multiplier impact on local economies than does conventional energy development. To the extent that FITs can drive renewable energy development more rapidly than other policy types, these local job creation benefits can be achieved on a quicker timescale. Germany, for example, employed over 250,000 in the renewable energy industry in 2007, an increase of more than 90,000 jobs since 2004.

Id. at 3 (emphasis added). The HCEI MOU contemplates “significant . . . economic growth opportunities.” *Id.* at 1 (emphasis added). One of an FIT’s “key goals” is to “build the workforce with crosscutting skills to enable and support a clean energy economy.” *Id.*⁶ at 1 (emphasis added).

F. Generator Security Objective.

The Commission should adopt general principles and an FIT that are most likely to provide the requisite security and support for renewable energy generators – and their investors – to achieve the Rapid Adoption Objectives (“Generator Security Objective”). The

¹⁶ Available at <http://www.renewableenergyworld.com/rea/news/article/2008/04/the-german-fit-for-renewable-energy-a-bargain-52156>.

Generator Security Objective may be further described as the generator's legal right to interconnect to the utility's electricity system and to receive payment for electricity generated, as well as appropriate payment rates.

The Generator Security Objective is a well-established feature of FIT design. The Scoping Paper refers to the "term of obligation" and "obligation period" for payment under an FIT. *Id.* at 9. Proposed national FIT legislation includes three main design elements modeled on successful national policies in Europe, one of which is a "mandatory purchase requirement through fixed-rate 20-year contracts." HCEI White Paper at 7 (emphasis added). A "key provision" of an FIT is that "the utility is obliged to connect [renewable energy] power plants to their grid at any connection point that is technically and economically suitable[.]" *Id.* The World Futures Council has identified grid access and interconnection is one of three "essential elements" of an FIT. HCEI White Paper at 29.

G. Grid Improvement Objective.

The Commission should adopt general principles and an FIT that are likely to achieve, to the extent reasonably possible, the rapid improvement of the electric utilities' grid systems to accommodate and support achievement of the Rapid Adoption Objective ("Grid Improvement Objective"). Assuming a successful FIT is implemented, to accommodate the anticipated growth in renewable energy generation the HECO Companies will of necessity be required to improve the grid in a manner consistent with this objective.

The Energy Agreement promotes and requires achievement of the Grid Improvement Objective. *See, e.g.*, Energy Agreement at "Wind Power for Hawaii" (HECO Companies "are committed to integrating the maximum attainable amount of wind energy on their systems"), "The Technology of Inter-Island Renewables" (discussing modifications to transmission grids), "Distributed Generation (DG) and Distributed Energy Storage" (review of

implementation of Rule 14.H tariffs and “significant investment” in smart grid technologies and changes to grid operations to accept higher levels of distributed generation), “Investment in the Infrastructure” (parties “specifically reject deferred maintenance” and agree additional investments in transmission, distribution and generation may be necessary), “The Smart Grid” (smart grid is “critical component” of Hawaii’s energy future to improve integration of intermittent renewables).

H. Global Leader Objective.

Finally, the Commission should adopt general principles and an FIT that are likely, to the extent reasonably possible, to establish Hawaii as a global leader in creating a clean energy economy (“Global Leader Objective”). In addition to Gov. Lingle’s pronouncement, the Energy Agreement provides that “[s]uccessfully developing Hawaii’s energy economy will make the State a global model for achieving a sustainable, clean, flexible, and economically vibrant and independent energy future.” *Id.* at 1 (emphasis added). One of the “key goals” of the HCEI MOU is to “establish an ‘open source’ learning model for others seeking to achieve similar goals.” *Id.* at 2 (emphasis added). As the KEMA Report notes, “Hawaii’s plan to establish an FIT by July, 2009, places the State at the leading edge of renewable energy policy development in the United States.” *Id.* at 67.

IV. PROPOSED GENERAL PRINCIPLES FOR FEED-IN TARIFFS

Blue Planet proposes the following General Principles for adoption by the Commission with regard to the FIT design features under consideration in this proceeding. Many of these General Principles are applied and set forth in greater detail in the attached Proposed FIT, and further supported by Blue Planet’s attached responses to the May 7, 2009 NRRI Questions.

A. General Principle: The Purpose of the FIT Is to Achieve the FIT Policy Objectives (i.e., the Rapid Adoption, Ratepayer Benefit, Job Growth, Generator Security, Grid Improvement, and Global Leader Objectives).

It is reasonable for the Commission to conclude that the purpose of an FIT in Hawaii is to achieve the above-described FIT Policy Objectives. Regulatory policies, such as an FIT, are adopted to achieve certain objectives. Absent specific objectives, regulatory policies may lack a sound basis for development and implementation. The FIT Policy Objectives, derived from State law, the HCEI MOU, the Energy Agreement, and related authoritative sources provide a sound basis for Commission decisions and action, and appear to be the subject of general agreement among the parties to this proceeding.

Feed-in tariffs developed and implemented in a manner consistent with the FIT Policy Objectives have proven highly successful in a large number of locations around the world. FITs “have been widely adopted” and are the most prevalent renewable energy policy in the world. KEMA Report at 55. As of 2007, over thirty-seven countries have adopted FITs. *Id.* FITs have “stimulated more renewable technology than any other policy mechanism.” P. Gipe, Renewable Energy Policy Mechanisms (Feb. 17, 2006)¹⁷ at 1.

Considerations proposed by the HECO Companies such as “standardization” are less compelling than the FIT Policy Objectives. It is not the purpose of an FIT merely to “standardize” or reduce a utility’s administrative burden in procuring renewable energy. In their submissions, the HECO Companies suggest that an FIT should be limited to small projects with standardized rates, interconnection requirements, and contract terms. *See, e.g.,* Final Statement of Position of the HECO Companies and the Consumer Advocate¹⁸ filed Mar. 30, 2009 at 4

¹⁷ Available at <http://www.wind-works.org/FeedLaws/RenewableEnergyPolicyMechanismsbyPaulGipe.pdf/>.

¹⁸ State of Hawaii Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs.

(standardization is “the hallmark of the FIT process”); Joint Proposal¹⁹ at 3 (“A FIT is best suited for renewable energy projects that lend themselves to the use of standardized energy payment rates and power purchase contract terms and conditions, and which can be developed and interconnected to the utility grid in a relatively predictable and systematic manner.”).

Unlike the FIT Policy Objectives, which promote substantive energy goals aimed at addressing Hawaii’s serious energy challenges and opportunities, the mere “standardization” of the HECO Companies’ procurement of renewable energy is not a sufficiently valid policy objective to guide Commission decisions on general principles in this proceeding. Proof of this is found in the potential result of such a tariff, such as the HECO Companies’ Straw Tariff,²⁰ which is based upon the “standardization” objective. The HECO Companies have estimated that the Straw Tariff is expected to generate less than 12 megawatts (“MW”) of renewable energy per year on Oahu.²¹ An FIT that adds less than 12 MW of renewable energy per year on Oahu, and proposes to eliminate Net Energy Metering, is wholly inconsistent with the Rapid Adoption Objective. *See* State of Hawaii Department of Business, Economic Development, and Tourism’s Final Statement of Position, Including Proposals for Feed-in Tariff Designs, Policies and Pricing Methods filed Mar. 30, 2009 at 23 (concluding the Straw Tariff “is designed mainly to replace the net energy metering program[.]”). Commission decisions on general principles therefore should not be guided by the notion of “standardization” of renewable energy procurement but should instead be founded on the broader FIT Policy Objectives, which are intended to advance Hawaii’s clean energy goals.

¹⁹ “Joint Proposal on Feed-in Tariffs of the HECO Companies and Consumer Advocate” dated Dec. 23, 2008 (“Joint Proposal”).

²⁰ On January 15, 2009, HECO distributed draft versions of its proposed Schedule FIT Tariff, Schedule FIT Agreement (Appendix I), Schedule FIT Overview (Appendix II), and Schedule FIT Program Overview (Appendix III) to the intervenor parties in “straw format” (“Straw Tariff”). E-mail from M. Chun (HECO) to Intervenor Parties dated Jan. 15, 2009.

²¹ *See* HECO Companies’ response to PUC-IR-34 at 2 (“annual targets” on Oahu for first two years of FIT could total 23.5 MW, or 11.75 MW per year).

B. General Principle: All Commercially Viable and Emerging Technologies Should Be Eligible for the FIT.

As a general principle, the FIT should be designed to accommodate all commercially-viable and emerging technologies. The FIT should avoid “picking winners” by excluding certain technologies through this regulatory proceeding. Consistent with the recognized ability of FITs to foster and stimulate renewable energy development, market selection should play a prominent role in the determination of eligible technologies for the FIT. The FIT should also be designed to accommodate emerging technologies, given the rapid pace of development of clean energy technologies.

The FIT should include the sources listed in the definition of “Renewable Energy Source” in the Proposed FIT. *Id.* at 2. These sources include biomass, biogas, geothermal energy, landfill gas, sewage treatment plant gas, hydropower, solar radiation, and wind. *Id.* The inclusion of each renewable resource type, the project size demarcations for each renewable resource type, and the basis for a different or separate rate for each size demarcation in the Proposed FIT are supported by the following evaluations, studies and analyses showing the success of the same or similar resource types, project size demarcations and rates under the German FIT:

- German Federal Environment Ministry, *Development of Renewable Energy Sources in Germany in 2007* (December 15, 2008)²²
- World Future Council, *Feed-In Tariffs – Boosting Energy for our Future* (June 2007)²³
- European Photovoltaic Industry Association, *Supporting Solar Photovoltaic Electricity: An Argument for Feed-in Tariffs* (2008)²⁴

²² Available at http://www.bmu.de/files/pdfs/allgemein/application/pdf/ee_zahlen_2007_en_update.pdf.

²³ Available at http://www.hermannscheer.de/en/images/stories/pdf/WFC_Feed-in_Tariffs_jun07.pdf.

- European Photovoltaic Industry Association, *European PV Association's Position Paper On A Feed-In Tariff For Photovoltaic Solar Electricity* (2005)²⁵
- European Photovoltaic Industry Association, *Overview of European PV support schemes* (Dec. 2008)²⁶
- Paul Gipe, *Renewable Energy Policy Mechanisms* (Feb. 2006)²⁷

The viability of each renewable resource type for each island and the viability of each project size for each island system as shown in the Proposed FIT are supported by the following evaluations, studies and analyses:

- Douglas Hinrichs, *Feed-in Tariff Case Studies: A White Paper in Support of the Hawaii Clean Energy Initiative* (Sentech, Inc. Sept. 2008)
- Global Energy Concepts LLC, *A Catalog of Potential Sites for Renewable Energy in Hawaii* (Department of Business Economic Development and Tourism, December 2006)²⁸
- Global Energy Concepts LLC, *Select Hawaii Renewable Energy Project Cost and Performance Estimates, 2004* (Department of Business Economic development and Tourism 2004)²⁹

The Joint Proposal excludes six of these sources (biomass, biogas, geothermal energy, landfill gas, and sewage treatment plant gas). An FIT that includes these additional sources is most likely to achieve the Rapid Adoption Objective.

²⁴ Available at http://www.epia.org/fileadmin/EPIA_docs/documents/An_Argument_for_Feed-in_Tariffs.pdf.

²⁵ Available at <http://www.wind-works.org/FeedLaws/EuropeFeedInTariffEPIA.pdf>.

²⁶ Available at http://www.epia.org/fileadmin/EPIA_docs/documents/20081215_EPIA_EU_support_schemes_overview-PUBLIC.pdf

²⁷ Available at <http://www.wind-works.org/FeedLaws/RenewableEnergyPolicyMechanismsbyPaulGipe.pdf>

²⁸ Available at <http://hawaii.gov/dbedt/info/energy/publications/cpsre07.pdf>

²⁹ Available at <http://hawaii.gov/dbedt/info/energy/publications/shrep04.pdf>

C. General Principle: Any Project Size, Quantity or Expenditure Limits That Impede Achievement of the Rapid Adoption Objective Must Be Avoided.

A paramount objective of an FIT is the achievement, to the greatest extent reasonably possible, of the Rapid Adoption Objective. FIT design must carefully weigh and consider any features that may impede achievement of this objective, or otherwise risk failure in advancing Hawaii's clean energy goals as prescribed by the Energy Agreement.

1. Project Size Limits.

a. 20 MW Limit.

Placing no limits on project sizes is most likely to achieve the Rapid Adoption Objective because it will encourage the maximum amount of renewable energy generation in the shortest time period. The Proposed FIT accordingly provides FIT rates for project sizes ranging from under 10 kW to 50 MW and over. *Id.* at 6-10. The Joint Proposal and Straw Tariff, by contrast, propose project sizes ranging from 100 kW to a maximum size of 500 kW.

If project size limits are deemed necessary, the limits should be in the range of 20 MW – far higher than the Straw Tariff's maximum of 500 kW. Most U.S. state FIT proposals are for projects 20 MW and under. KEMA Report at 65. Three tariff bills introduced in the 2006-2007 Hawaii legislative session all contained language establishing a tariff for solar photovoltaic systems up to 20 MW in size. HCEI White Paper at 27. The California Public Utilities Commission may expand an FIT project cap from 1.5 MW to 20 MW and the California Energy Commission is considering an FIT for projects 20 MW and under. KEMA Report at 65. And on April 17, 2009, the Hawaii State Legislature adopted a resolution on feed-in tariffs "requesting the Public Utilities Commission to adopt and implement true feed-in tariffs for clean energy systems up to twenty megawatts in size." S. Res. 23, S.D. 1, 25th Leg. Reg. Sess. (2009)

(emphasis added). In short, because they are dramatically smaller than typical project sizes, the Joint Proposal project sizes are not likely to achieve the Rapid Adoption Objective.

The reasons given for the Joint Proposal's unusually small project sizes do not withstand scrutiny. *See* KEMA Report at 16-19. Concerns about costs and delays associated with environmental and land use permitting and interconnection studies properly fall to the renewable energy developer, rather than the utility. Alleged "complex financial accounting issues" may possibly be addressed by legislatively-authorized payment guarantees. As for commercial viability, that determination is best left to the marketplace and should not be relied upon by a utility to screen out projects.

2. Quantity or Expenditure Limits.

The Proposed FIT includes island-wide grid penetration limits for intermittent renewable energy to avoid requiring the utility and ratepayers to pay for renewable energy from intermittent sources, if such sources do not displace generation from imported fuels due to the need to maintain such generation for purposes of system reliability. A proposed aggregate island-wide penetration limit of 25% of peak demand for wind energy is based on studies³⁰ showing that the additional operating costs imposed on the system to maintain system reliability are moderate (from \$3/MWh to \$5/MWh) at wind capacity penetrations ranging up to 29%. A proposed aggregate island-wide penetration limit of 20% of peak demand for photovoltaic solar power is based on studies³¹ showing that, at minimum system loading of 35%, increasingly large

³⁰ *See* B. Parsons, M. Milligan, J.C. Smith, E. DeMeo, B. Oakleaf, K. Wolf, M. Schuerger, R. Zavadil, M. Ahlstrom and D. Yen Nakafuji, "Grid Impacts of Wind Power Variability: Recent Assessments from a Variety of Utilities in the United States," National Renewable Energy Laboratory Conference Paper NREL/CP-500-39955 (July 2006) <http://www.uwig.org/Ewec06gridpaper.pdf>; J.C. Smith, B. Parsons, T. Acker, M. Milligan, R. Zavadi, M. Schuerger and E. DeMeo, "Best Practices in Grid Integration of Variable Wind Power: Summary of Recent US Case Study Results and Mitigation Measures," presented at Europe Wind Energy Conference '07, Milan Italy (May 2007). <http://www.wapa.gov/UGP/PowerMarketing/WindHydro/EWEC07paper.pdf>.

³¹ *See* P. Denholm and R. Margolis, "Very Large-Scale Deployment of Grid-Connected Solar Photovoltaics in the United States: Challenges and Opportunities," National Renewable Energy Laboratory Conference Paper NREL/CP-

amounts (> 50%) of photovoltaic electricity are unusable as PV penetration exceeds 20% of peak demand. Any FIT quantity limits should be consistent with these Penetration Limits as set forth in the Proposed FIT. *Id.* at 10.

It is noted that the HECO Companies provided no numerical figures or specific quantities in response to the Commission's Information Request asking for "the maximum amount of total and additional resources that can be accommodated without compromising reliability?" *See* HECO Companies' Response to PUC-IR-1 dated Mar. 18, 2008. Nor were the HECO Companies able to provide such a figure during the Panel Hearing. Thus, establishing a quantity limit based upon such a figure is not possible at this time.

3. Competitive Bidding Framework

Consistent with the foregoing, the Framework for Competitive Bidding ("CBF")³² should be effectively discontinued in conjunction with the Commission's adoption of an FIT, at least with regard to projects below 20 MW size on Oahu. The CBF does not apply to generating units with a net output available to the utility of 1% or less of a utility's total firm capacity, including that of independent power producers, or with a net output of 5 MW or less, whichever is lower ("CBF project size threshold"). CBF at 5. The Energy Agreement suggests this proceeding is to consider "the continuing role of the Competitive Bidding Framework" as a factor in determining the best design for an FIT. *Id.* at 17. The targeted project sizes of the Straw Tariff are less than the CBF project size threshold and the Joint Proposal suggests that the CBF shall remain unchanged. Joint Proposal at 16. The Proposed FIT, however, allows project sizes above the CBF project size threshold.

620-39683 (April 2006) <http://www.nrel.gov/pv/pdfs/39683.pdf>; Paul Denholm and Roberet M. Margolis, "Evaluating the limits of solar photovoltaics (PV) in traditional electric power systems," 35 Energy Policy 4424-4433 (Elsevier, September 2007).

³². *See* Docket No. 03-0372, Decision and Order No. 23121 (Dec. 11, 2006).

A typical FIT such as the Proposed FIT is more likely than the CBF to achieve the Rapid Adoption Objective because a competitive bidding process is relatively costly and more time-consuming. As Blue Planet's expert Paul Gipe testified during the Panel Hearing, "the experience worldwide has been that the use of request for proposals bring a non-transparent enclosed system and often results in only 50 percent of the contracted capacity being built." Tr. I-38:18-21; I-39:12-16. Under the CBF, the HECO Companies have discretion as to whether and when any request for proposals will be issued. Tr. I-46:19-23. As the HECO Companies testified, certain projects fail to reach completion under the CBF due to the parties' failure to reach agreement on price or operational terms. Tr. I-57:6-11. It is undisputed that to date no energy has been added to the HECO Companies' systems under the CBF. PUC-IR-A at 1.

As explained in the KEMA Report, FITs reduce developer cost and risk "because they are standard offers available without recourse to costly and lengthy competitive processes, resulting in lower development costs, a reduced rate of contract failure, and an increased ability for small projects to develop renewable energy systems." *Id.* at 1-2. For those reasons, competitive bidding has been less successful than tariffs in promoting the "rapid growth" of renewable energy. P. Gipe, *Renewable Energy Policy Mechanisms* (Feb. 17, 2006) at 34-36. The KEMA Report also notes that a tender process in the Netherlands analogous to competitive bidding is limited by its "lengthy process" which results "transaction costs for both buyers and sellers [which] are significant, especially the first time. *Id.* at 73; *see also* Solar Electric Power Association, *Utility Procurement Study: Solar Electricity in the Utility Market* (Dec. 2008)³³ at 62-63 (California's FIT-like Standard Offer No. 4 contracts resulted in contracts for 20,000 MW with 10,000 MW reaching operations; subsequent competitive bidding resulted contracts for 1,700 MW with 49 MW reaching operations).

³³ Available at <http://www.solarelectricpower.org/docs/Procurement%20Report%20FINAL%20-%202012-16-08.pdf>

The HECO Companies and Consumer Advocate suggest that the CBF is preferred based upon "system planning and operation issues." Joint Proposal at 16. As discussed above, "standardization" of the HECO Companies' procurement of renewable energy, although potentially valuable to the utilities, is necessarily of less importance than the Rapid Adoption Objective in this proceeding. In addition, it is reasonable to assume that such planning and operation issues will be reduced or eliminated to the extent the Grid Improvement Objective is achieved through implementation of a successful FIT. In short, as Zero Emissions Leasing, LLC testified at the Panel Hearing, "[i]t's not bad to get the best price [through competitive bidding], but it is bad if you don't get enough renewable energy to make a difference when the oil tankers don't arrive." Tr. I-72:18-21.

4. Ratepayer Impact

Overly-restrictive project size, quantity or expenditure limits that impede achievement of the Rapid Adoption Objective are not justified by potential short-term cost increases to ratepayers. As explained above with regard to the Ratepayer Benefit Objective, the purpose of an FIT is to secure energy at a cost to ratepayers that is lower, over the long run, than the cost of imported oil. The Energy Agreement contemplates short term increases in the cost to ratepayers and has concluded that any such increases are acceptable in light of the economic and environmental benefits from an FIT that helps achieve the FIT Policy Objectives and goals of the Energy Agreement.

Although theoretically an FIT rate may be set in a manner that results in an unacceptable cost to ratepayers, relevant experience with Germany's FIT law suggests the Proposed FIT is unlikely to do so. The cumulative additional net cost for the German FIT program has been estimated at approximately \$573 per person over twenty years. M. Maedl, *The*

German FIT for Renewable Energy – A Bargain! (April 14, 2008).³⁴ Thus, FIT design should properly give priority to the Energy Agreement's economic and policy objectives over suggestions that an FIT may result in an unacceptable cost to ratepayers.

5. Grid Integration

Alleged current or near-term technical limitations concerning integration of renewable resources onto the utilities' electricity grids ("grid integration") do not provide a basis for overly-restrictive project size, quantity or expenditure limits that impede achievement of the Rapid Adoption Objective. As will be the case upon adoption of the FIT, it is suggested that the HECO Companies carry the burden of proof with regard to establishing grid integration limits. See D. Hinrichs, *Feed-in Tariff Case Studies: A White Paper in Support of The Hawaii Clean Energy Initiative* ("Hinrichs") at 7 (FIT switches the "burden of proof" from the renewable energy generator to the utility with regard to connection to the grid).

Assuming the grid integration allegations are valid, FIT design must properly give priority to economic and energy policy objectives. Grid integration concerns are necessarily of limited relevance in designing an FIT. They should not drive the design process or take priority over economic and energy policy objectives which are the basic focus of an FIT. Indeed, the Commission's entire 29-page Scoping Paper appears to make only one reference grid integration, underscoring its general lack of importance in FIT design. Scoping Paper at 28.

Whether grid integration issues may justify project size limits is at best unclear. Although the HECO Companies have made such issues the focus of their written submissions and Panel Hearing testimony, they have also stated project size limits of up to 5 MW are possible, provided need, cost, and relationship to other procurement methods are considered:

³⁴ Available at <http://www.renewableenergyworld.com/rea/news/article/2008/04/the-german-fit-for-renewable-energy-a-bargain-52156>.

[I]ncreasing the proposed limit up to 5 MW as some in this proceeding have proposed would result in the potential generation on a circuit being almost twice the amount of the corresponding load on that circuit which would require modification to the protection schemes and voltage regulating equipment on those circuits. While it is possible to implement these types of modifications, they should not be undertaken without a demonstrated need or without an appropriate evaluation of the cost relative to the resource to be added – factors which are considered as part of the utility's other procurement mechanisms for projects of this size.

Final Statement of Position of the HECO Companies and Consumer Advocate filed Mar. 30, 2009 at 33 (emphasis added).

Even if grid integration is considered in FIT design in this proceeding, it should be considered primarily in a manner that is consistent with the grids as described and contemplated by the Energy Agreement, rather than the current grids. The Energy Agreement contains numerous commitments by the parties to maintain and develop grids which integrate renewable energy generation in a manner consistent with the Energy Agreement's overriding policy objectives. *See, e.g.*, Energy Agreement at "Wind Power for Hawaii" (HECO Companies "are committed to integrating the maximum attainable amount of wind energy on their systems"), "The Technology of Inter-Island Renewables" (discussing modifications to transmission grids), "Distributed Generation (DG) and Distributed Energy Storage" (review of implementation of Rule 14.H tariffs and "significant investment" in smart grid technologies and changes to grid operations to accept higher levels of distributed generation), "Investment in the Infrastructure" (parties "specifically reject deferred maintenance" and agree additional investments in transmission, distribution and generation may be necessary), "The Smart Grid" (smart grid is "critical component" of Hawaii's energy future to improve integration of intermittent renewables).

Finally, the Proposed FIT acknowledges the HECO Companies' right to deny interconnection or curtail generation under conditions such as those cited in Section 5 (Continuity of Service), Section 6 (Personnel and System Safety) and Section 7 (Prevention of Interference) of the Straw Tariff.³⁵ This fact underscores the false choice implied by the assertion that grid integration justifies project size, quantity, or expenditure limits. The FIT should be designed to implement the Energy Agreement's economic and energy policy goals, regardless of subordinate allegations concerning grid integration. Indeed, a robust and properly-designed FIT may transform alleged grid integration concerns into a source of economic opportunity. As the KEMA Report notes, such an FIT may result in Hawaii being "well positioned to export innovative grid integration strategies as other states and countries reach higher renewables penetration levels in the future." *Id.* at 3 (emphasis added).

D. General Principle: The FIT Must Contain a Mandatory Interconnection Requirement and Must Compensate New Renewable Energy Generators for Curtailed Energy.

As a general principle, the FIT should contain a mandatory purchase requirement because it is fundamental to an FIT and it is most likely to achieve the Generator Security Objective. The Proposed FIT therefore states that an FIT agreement "shall oblige" the utility to "purchase and pay for all Renewable Source Energy that would be generated by the Renewable Energy Facility and delivered to the electric system of the Company but for curtailment by the Company of generation or delivery of Renewable Source Energy by the Renewable Energy Generating Facility. *Id.* at 5 (emphasis added). By contrast, Appendix I to the Straw Tariff states that such an agreement "shall not be construed to constitute a 'take or pay' contract." *Id.*

³⁵ On January 15, 2009, HECO distributed draft versions of its proposed Schedule FIT Tariff, Schedule FIT Agreement (Appendix I), Schedule FIT Overview (Appendix II), and Schedule FIT Program Overview (Appendix III) to the intervenor parties in "straw format" ("Straw Tariff"). E-mail from M. Chun (HECO) to Intervenor Parties dated Jan. 15, 2009.

at 1. The HECO Companies have suggested such a requirement “would assign unreasonable financial risk to the utility and its customers.” BP-IR-7 at 1.

Mandatory purchase requirements are fundamental to any FIT for the reasons given above in the description of the Generator Security Objective. The Proposed FIT requires the utilities to pay for all renewable generation. This right to payment held by the renewable energy generator follows from its right to access the grid. A “key provision” of an FIT is that “the utility is obliged to connect [renewable energy] power plants to their grid at any connection point that is technically and economically suitable[.]” Hinrichs at 7; *see also Id.* at 24 (noting that “guaranteed interconnection” and a “mandatory purchase requirement” are two of the three main design elements of a May 2008 proposed national FIT law); World Futures Council, *Feed-in Tariff Design Guide* (grid access and interconnection is one of three “essential elements” of an FIT).³⁶

A mandatory purchase requirement that includes payment for curtailment is most likely to achieve the Generator Security Benefit because generators and their investors will have certainty that the FIT does not allow the HECO Companies to not pay them based upon curtailment. This approach may or may not result in higher short-term costs to ratepayers. Adoption of a typical FIT that achieves the Ratepayer Benefits Objective, however, may result in cost savings greater than any such cost savings that may result from ratepayers not paying for curtailed energy. Payment for curtailment may be made through an increased FIT payment rate. *See* HDA/HECO-IR-1 at 1 (HECO Companies anticipate the FIT rate may include a “slight upward adjustment to account for curtailment”); KEMA Report at 25 (curtailment as possible adjustment factor in Discounted Cash Flow analysis).

³⁶ Available at <http://onlinepact.org/features.html>.

E. General Principle: The Net Energy Metering Program Shall Remain Available to Customers.

Although a typical FIT may play a greater role than net energy metering ("NEM") in utility acquisition of renewable energy sufficient to achieve the Rapid Adoption Objective, it is reasonable to allow customers the choice between NEM and an FIT, as is reflected in the Proposed FIT. The Energy Agreement states that the parties are in agreement that there should be no system-wide caps on NEM, but also characterizes NEM as an "interim measure" that is to be replaced by an FIT. *Id.* at 28. The Joint Proposal proposes no new NEM application, no expansion of NEM capacity, and grandfathering of existing NEM systems. *Id.* at 15. NEM customers may "opt-in to the FIT system at any time, subject to a different tier of energy pricing and shorter contract term." *Id.*

The HECO Companies testified at the Panel Hearing that their current position, along with the Consumer Advocate, is to allow a NEM customer the choice between the FIT and NEM, but only for the first two years of the FIT program. Tr. I-143:20-22. The FIT Proposal allows a renewable energy generator the choice of entering into an NEM agreement or an FIT agreement with the utility without a two-year or any time restriction.

It is reasonable to give renewable energy generators a choice to enter into a NEM agreement because it is required by section 269-102(a), Hawaii Revised Statutes, and continued availability of NEM may contribute to broader public support for achievement of the Rapid Adoption Objective. *See, e.g., Honolulu Advertiser, State PUC raises limits on renewable energy* (Mar. 31, 2008) (citing "explosive growth" in solar systems due in part to availability of net energy metering).³⁷ As the HECO Companies testified at the Panel Hearing, there has been "significant growth," Tr. I-111:13-14, and a "ramping up" of net energy metering in 2007-08.

³⁷ Available at <http://the.honoluluadvertiser.com/article/2008/Mar/31/bz/hawaii803310344.html>.

Tr. I-109:25 – I-10:1. Although the KEMA Report suggests various reasons site owners may prefer an FIT to NEM, these reasons do not necessarily establish the necessity or requirement of terminating the NEM program. *See* KEMA Report at 11. Customers should be further allowed to undertake a hybrid of NEM and FIT, pursuant to which all kWh produced by the NEM customer up to the customer's annual aggregate usage is to be compensated by means of kWh credits (as under the NEM program), and production above the customer's annual aggregate use level is to be compensated on a kWh rate basis at the FIT rate.

F. General Principle: The FIT Shall, In Practice, Essentially Replace Schedule Q Contracts and Negotiated Power Purchase Agreements.

Assuming the Commission adopts an FIT capable of achieving the FIT Policy Objectives, as a practical matter Schedule Q contracts and negotiated power purchase agreements should play a limited role in the future acquisition of renewable energy in Hawaii. Generators and investors will favor an FIT based upon the Generator Security Objective. The HECO Companies should favor an FIT for its ability to achieve the Rapid Adoption Objective consistent with commitments made under the Energy Agreement. With regard to existing Schedule Q contracts, the HECO Companies and the State of Hawaii Department of Business, Economic Development and Tourism ("DBEDT") agree that such contract holders should have the option of entering into the FIT program. Tr. I-167:4-10.

G. General Principle: Interconnection Costs May Be Allocated Between the HECO Companies and Renewable Energy Generators.

It is reasonable and appropriate for costs of interconnection to be allocated between the HECO Companies and renewable energy generators, based upon general principles of fairness and practical considerations. The Proposed FIT proposes allocation of interconnection costs based upon three tiers. These tiers are differentiated by island, project

electrical capacity, interconnection features and standards, and types of interconnection costs.

See Proposed FIT at 4-5.

H. General Principle: Renewable Energy Credits Shall Be the Property of the Renewable Energy Generator.

The developer who took the risk in developing the renewable energy project is entitled to the rewards of the project, including the value of any environmental credits associated with the project in any market set up for the exchange of such credits. If the utility is under a state mandate to achieve certain levels of renewable energy production, then the utility should have the opportunity to develop its own renewable energy projects that, under the Proposed FIT, would be eligible for FIT rates on the same terms as renewable energy projects developed by independent developers.

I. General Principle: Queuing Procedures Shall Be Modeled After the Midwest ISO's "First-Ready-to-Interconnect, First-Served" Queuing Procedures.

The Midwest ISO queuing procedure³⁸ could operate and be implemented for each island electric system without significant modification. Power quality and power reliability are factors affecting whether a project meets the utility's technical requirements for interconnection and, therefore, whether it is "ready-to-interconnect," but should not themselves be a factor in determining the priority that a project receives under the utility's queue management procedure for interconnection.

³⁸ See Midwest Independent Transmission System Operator ("Midwest ISO"), Generator Interconnection Process Tariff (August 25, 2008) http://www.midwestmarket.org/publish/Document/25f0a7_11c1022c619_-7d600a48324a/Attachment%20X%20GIP.pdf?action=download&_property=Attachment; Midwest ISO, Business Practices Manual: Generator Interconnection (Manual No. 15, TP-BPM-004-r2, January 6, 200p) http://www.midwestmarket.org/publish/Document/45e84c_11cdc615aa1_-7e010a48324a; 124 FERC ¶ 61,183, Midwest Independent Transmission System Operator, Inc., Docket No. ER08-1169-000, Order Conditionally Accepting Tariff Revisions and Addressing Queue Reform (August 25, 2008) http://elibrary.ferc.gov/idmws/doc_info.asp?document_id=13641108; Working group for Investment in Reliable & Economic electric Systems (WIRES), Integrating Locationally-Constrained Resources Into Transmission Systems: A Survey of U.S. Practices (October 2008) http://www.wiresgroup.com/images/WIRES_Report_LCR.pdf.

The essential elements of the Midwest ISO that Blue Planet supports the adoption of include (i) first-ready-to-interconnect, first-served queuing procedure, (ii) pre-queue system planning and analysis phase, (iii) system impact restudy, (iv) fee to enter the definitive planning stage covers the restudy cost with unpaid balances returned to the customer, (v) technical data and milestones required for entry into definitive planning phase, (vi) demonstration of completion of additional substantive milestones prior to commencement of the utility's facilities study, and (vi) force majeure-only suspension of interconnection agreement.

The queuing procedures in the Midwest ISO are preferable because they avoid the disadvantages of alternative queuing procedures under which (i) the queue is on a first come, first-served procedures for each technology type, subject to annual and size limits determined by the utility, with fixed 12-month or 24-month project operation deadlines depending on technology type and project size, (ii) the project loses its place in the queue if it does not achieve operation by the deadline, (iii) multiple queues for each technology type by annual limit and size limit are established, (iv) there is a random queuing of viable projects behind non-viable projects for up to 24 or more months based on date of application, and (v) viable projects that either fail to meet an arbitrary 12-month or 24-month deadline or fail to pay the additional fee to stay behind the non-viable projects are dismissed.

J. General Principle: The Length of the FIT Contract Term Shall Be Twenty Years.

The Commission should consider twenty year terms for most if not all technologies. It is well established that Germany has experienced remarkable success using FITs; these FITs have a twenty year term. *See* Scoping Paper at 22. Spain's FIT has no limit on its term – it continues indefinitely, provided the renewable energy producer continues to generate

power. *Id.* Terms shorter than twenty years appear unlikely to achieve the goals of the Energy Agreement.

During the March 18-19, 2009 Technical Conference and Settlement Discussions, it was agreed that the standard term for a Schedule FIT Agreement should be twenty years for all eligible renewable resources, provided that appropriate evidence is presented to support this length of term as consistent with the average expected life of each eligible resource.

Consistent with the foregoing, it is noted that the Joint Proposal and Straw Tariff submitted by the HECO Companies and the Consumer Advocate propose a term of twenty years for solar photovoltaic systems. Joint Proposal at 13, Straw Tariff at 2. The consultant report the HECO Companies and Consumer Advocate submitted in support of their Joint Proposal states that, “[b]ased on recent contracting experience in Hawaii including HECO’s power purchase agreement for the Archer Substation PV project, a 20 year term is proposed for newly installed PV systems.” KEMA, Inc., “HECO Feed-in Program Plan” (Dec. 2008) at 33. Under German FIT legislation, renewable energy technologies are “paid a premium rate that is designed to generate a reasonable profit for investors over a 20-year term.” D. Hinrichs, *Feed-in Tariff Case Studies: A White Paper in Support of The Hawaii Clean Energy Initiative* at 7 (emphasis added), *see also Id.* at 21 (Ontario, Canada FIT has 20-year term), *Id.* at 24 (2008 U.S. national FIT legislation proposed 20-year contracts); *Id.* at 25 (California FIT allows choice of 20-year contract); *Id.* at 25-27 (Michigan, Minnesota and Hawaii propose 20-year FIT contracts); *Id.* at 33 (20-year contract term is one of two factors driving success of Germany’s and Spain’s FITs); P. Gipe, *Renewable Energy Policy Mechanisms* (Feb. 17, 2006) at 23 (“Typical Renewable Tariff Contract Length” table with 20-year contract terms).

K. General Principle: The Commission Shall Complete Its Review the FIT Within Two Years of Adoption.

Mandatory Commission review should occur within a period of not more than two years following implementation of the FIT. Blue Planet notes that criteria for the review should include whether and the extent to which the FIT is robust enough to meet energy policy goals, in addition to cost-related factors. It is also recommended that the evaluation be based upon actual renewable energy produced, rather than renewable energy under contract.

V. CONCLUSION

Given the challenges associated with Hawaii's dependence on imported oil and the opportunities presented by Hawaii's swift transition to a clean energy economy, it is both reasonable and appropriate for the Commission to "move more decisively and irreversibly away from imported fossil fuel for electricity and transportation and towards indigenously produced renewable energy"³⁹ by adopting a robust FIT. Consistent with the FIT Policy Objectives, such an FIT may be capable of securing the rapid adoption of renewable energy and is therefore a reasonable and appropriate method to address these profound challenges and opportunities, and to secure for Hawaii's people the economic and environmental benefits from swift transition to a clean energy economy.

DATED: Honolulu, Hawaii, June 12, 2009.



DOUGLAS A. CODIGA
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³⁹ Energy Agreement at 1.

**BLUE PLANET FOUNDATION'S RESPONSES TO THE
NATIONAL REGULATORY RESEARCH INSTITUTE'S
QUESTIONS PROVIDED MAY 7, 2009**

I. Caps and cost containment mechanisms

- A. Should the Commission determine a total "budget" for FIT purchases? Should this budget be in terms of a total amount of dollars in cost that ratepayers should incur to support these purchases, or in terms of a total quantity of purchases? Or both? Over what period of time should this budget apply?**

Any quantity or expenditure limits that impede achievement of the rapid adoption of the maximum feasible amount of renewable energy, or Rapid Adoption Objective,¹ should be avoided by the Commission.

- B. In determining a budget, how should the Commission quantify the value of indirect (e.g. security, environmental and business development) benefits of the FIT?**

In determining whether to establish a total budget or expenditure cap, the Commission should quantify the value of the FIT benefits.

- C. What should be the appropriate relationship between (a) the Commission's decision in the present FIT proceeding, and (b) the Commission's decision in the CESP proceeding (where it will determine an integrated strategy for reducing fossil fuel use)? Focusing on the parameters of cost and quantity of renewables purchased under an FIT, is it necessary or desirable for the Commission to make all decisions now (prior to the CESP outcome); or is it more desirable for the Commission to view its present decision in this FIT proceeding as a beginning, to be revisited once the CESP proceeding provides a clearer view about which measures produces the greatest returns, in terms of cost-effective fossil fuel use reduction?**

It is reasonable and appropriate for the Commission to proceed to a decision in this docket at the same time that the CESP proceeding is getting underway because the FIT and CESP proceedings may be harmonized. The FIT Policy Objectives mandate support the adoption of an FIT at this time. The CESP proceeding does not appear to create any restriction or prohibition on a Commission decision in this proceeding. Establishment of an FIT in this proceeding may support the development of information relevant to the CESP process.

¹ Capitalized terms in this document are as defined in the Opening Brief of Blue Planet Foundation.

D. Concerning the budget cap:

1. If the Commission adopts a cost-based cap, how should it mathematically define "cost"?

If the Commission adopts a cost-based cap, the Commission should define "cost" as the product of the quantity of renewable energy delivered to the utility (or the quantity of renewable energy that would have been delivered but for curtailment) times the applicable FIT rate.

a. If included in the cost calculation, how should the Commission define "avoided cost"?

"Avoided cost" should be included in the FIT cost calculation using the definition for "avoided cost" that the utility uses in reporting monthly "avoided cost" data to the Commission.

b. What additional ratepayer costs (e.g. administrative and contractual penalties) associated with the FIT should be included in the FIT cost calculation and how should they be determined?

Administrative and contractual penalties should not be included in the FIT cost calculation because such penalties should not be included in the FIT. If such penalties are included in the FIT, the costs of such penalties should not be borne by ratepayers. Inclusion of such penalties in the FIT may reduce the cost-effectiveness of the FIT by increasing the risks and therefore the costs of capital to developers of renewable generation projects, thereby impeding achievement of the Generator Security Objective. The only costs that should be borne by ratepayers are the costs of purchasing renewable energy at the FIT rate.

c. What direct benefits (e.g. reduced black-start costs) should be included in the FIT cost calculation and how should they be determined?

Distributed generation benefits, including reliability benefits like reduced black-start costs, are direct benefits that should be included in the FIT cost calculation.

2. If the Commission adopts cost-based caps, over what duration should the initial cap apply (e.g. annual caps or one cap until the next reevaluation)?

The duration of an initial cost-based expenditure cap should be no more than one year.

3. If the Commission adopts cost-based caps, what should the initial cap be?

If the Commission adopts a cost-based expenditure cap, the initial expenditure cap should be equivalent to the projected total amount of utility purchases of renewable energy during the first five years of the Proposed FIT.

- 4. If the Commission adopts quantity-based caps, how should it mathematically define "quantity" (e.g. installed capacity or projected kWh)?**

A cap on the amount of intermittent renewable generation that might be added to each island grid, like the 25% grid penetration cap for wind and the twenty % grid penetration cap for solar proposed by the Proposed FIT, should be defined in MW of installed capacity as a percentage of peak load in MW for each such grid. Island-wide grid penetration caps for intermittent renewable generation are justified to contain ratepayer costs because it does not make sense to oblige the utility and ratepayers to pay for renewable generation from intermittent sources (solar and wind) if such renewable generation displaces no fixed generation from imported fuels because of the need to maintain such fixed generation to maintain present-day levels of grid reliability.

- 5. If the Commission adopts quantity-based caps, over what duration should the initial cap apply (e.g. annual caps or one cap until the next reevaluation)?**

If the Commission adopts a quantity-based cap, such as the grid penetration cap for renewable generation proposed in Proposed FIT, the initial cap should apply until interconnection applications have been received for the initial cap amount, at which time the Commission should re-evaluate the economic basis for any increase in the cap amount.

- 6. If the Commission adopts quantity-based caps, what should the initial cap be?**

If the Commission adopts quantity-based caps, the initial caps should be grid penetration caps equal to 25% of island-wide peak load for wind generation and 20% of island-wide peak load for solar generation.

- E. How should the Commission allocate any cost or quantity caps among technologies, project sizes and islands (e.g. no restrictions or carve-outs)?**

The Commission should allocate any grid penetration quantity caps for intermittent renewable generation on the basis of percentage of island-wide peak load for each island, as is set forth in the Proposed FIT.

- F. Should FIT rates increase based on milestones, decrease based on milestones, or remain constant between periodic reexaminations? What milestones?**

FIT rates should remain constant between periodic reexaminations. Milestones should not be used to set FIT rates, but should be used to order the queue for interconnection requests.

II. Reliability considerations

A. Should the Commission require the utility to propose, for Commission approval, transparent reliability standards that the utility would apply to determine:

1. when additional intermittent generation can or cannot be added to islands or circuits without compromising system security, and

No. Existing reliability standards (i.e., Rule 14H) are adequate for utility determination whether additional intermittent generation can or cannot be interconnected to island grids without compromising grid security.

2. if specific renewable energy projects would compromise system security?

No. Existing reliability standards (i.e., Rule 14H) are adequate for utility determination whether interconnection of specific renewable energy projects would compromise grid security.

B. Should the Commission require an independent monitor to oversee the utility's reliability determinations as related to the FIT?

No. The Commission should not require an independent monitor to oversee the utility's reliability determinations as related to the FIT because the FIT is a price specification, not a technical or reliability specification for interconnection of renewable generation. The Commission may consider opening a new docket to investigate interconnection requirements studies (IRSSs) under Rule 14H and establish procedures for speedy resolution of disputes over interconnection and allocation of interconnection costs between the utility and the renewable generator.

III. FIT eligibility

A. Which technologies should be eligible for the initial FIT?

Commercially viable renewable energy generation technologies should be eligible for the initial FIT.

1. Please identify the technologies you believe should be eligible, and why.

As set forth in the Proposed FIT, the following technologies should be eligible for the initial FIT because they are commercially viable:

Biomass or biogas
Geothermal energy
Landfill gas or sewage treatment plant gas
Hydropower
Photovoltaic

Concentrating solar
Onshore wind
Offshore wind

- 2. For technologies or technology/size combinations without Hawaii commercial experience, how can the Commission obtain or estimate reliable cost and performance information to calculate FIT rates?**

For technologies or technology/size combinations without Hawaii commercial experience, the Commission may obtain or estimate reliable cost and performance information from foreign jurisdictions that have established FITs which have led to successful development of projects using such technologies or technology/size combinations.

- 3. Should hybrid projects using biofuels be eligible for the FIT if biofuels are not included in the initial FIT?**

No. Hybrid projects using biofuels should not be eligible for the FIT if biofuels are not included in the initial FIT because an initial FIT that includes indigenously produced biofuels only if hybridized with imported fossil fuels or imported biofuels are less likely to move Hawaii more decisively and irreversibly toward indigenously produced renewable energy and otherwise achieve the Rapid Adoption Objective.

- 4. Should hybrid projects using conventional fuels be eligible for the FIT? If so, should all of the energy produced by such projects receive FIT rates?**

No. Hybrid projects using conventional fuels should not be eligible for the FIT because a FIT that includes imported fossil fuels or imported biofuels are less likely to move Hawaii more decisively and irreversibly toward indigenously produced renewable energy and otherwise achieve the Rapid Adoption Objective.

B. What sizes of projects should be eligible for the initial FIT?

Any project size limits that impede achievement of the Rapid Adoption Objective should be avoided by the Commission. Ideally, projects of all sizes should be eligible for the FIT, subject only to island-wide grid penetration caps for intermittent renewable generation and aggregate renewable generation caps equal to island-wide peak load for each island.

C. Should existing Schedule Q or negotiated PPA projects be eligible for the FIT?

Yes. Existing Schedule Q and negotiated PPA projects using renewable energy technologies otherwise eligible for the FIT should be eligible for the FIT if the Commission concludes that the cost to ratepayers of renewable energy from such projects under the FIT over the next twenty years is likely to be no more than the cost to ratepayers of such energy under Schedule Q or the existing PPAs over the next twenty years.

- 1. If existing projects are eligible for the FIT, how, if at all, should the term of the FIT differ from those offered to new projects (e.g. take into account years of prior operation)?**

If the Commission decides that existing projects should be eligible for the FIT because the cost to ratepayers under the FIT is likely to be no more than the cost to ratepayers under Schedule Q or existing PPAs over the next twenty years, the term of the FIT offered to such projects should be twenty years and should not differ from the FIT term offered to new projects.

- 2. If existing projects are eligible for the FIT, how, if at all, should the FIT rates differ from those offered to new projects?**

If the Commission decides that existing projects should be eligible for the FIT because the cost to ratepayers under the FIT is likely to be no more than the cost to ratepayers under Schedule Q or existing PPAs over the next twenty years, the FIT rate offered to such projects should not differ from the FIT rate offered to new projects.

- D. Should the FIT be available for incremental additions to existing projects?**

Yes.

- E. Under what conditions, if at all, should utility affiliate-owned projects be eligible for the FIT?**

Utility affiliate-owned projects should be eligible for the FIT, provided that the utility is obliged to take, purchase and pay for renewable energy delivered by the utility affiliate on the same terms as renewable energy delivered by an independent renewable energy generator, and the Commission establishes a queuing procedure for interconnection priority that is uniformly applicable to projects owned by the utility affiliate and projects owned by independent renewable energy generators.

IV. Setting rates

- A. What costs should the FIT cover (e.g. only the most cost-effective projects, typical projects or most projects)?**

The FIT rates should be based on typical project costs, plus a return sufficient to induce rapid development of large-scale renewable generation or otherwise achieve the FIT Policy Objectives, including the Rapid Adoption Objective.

- B. What should the rate of return be for FIT projects?**

The rate of return for FIT projects should be sufficient to achieve the FIT Policy Objectives and to induce rapid development of large-scale renewable generation at low cost to the ratepaying public.

1. How, if at all, should the returns for different projects reflect varying risks and cost of capital for different technologies?

The returns for different projects naturally will reflect varying risks and costs of capital for different technologies used by such projects. Different FIT rates should be set for different technologies and different project sizes to reflect varying costs, including varying costs of capital, for different technologies, to reflect returns adequate to compensate investors for project development risks, and to induce rapid development of large-scale renewable generation at low cost to the ratepaying public and maximum benefit to the general public.

2. Should the implied returns in the FIT decline over time?

The implied returns in the FIT should decline over time if the Commission establishes and maintains a feed-in tariff like Proposed FIT that is limited primarily by the island-wide grid penetration limits for intermittent renewable generation and the island-wide peak load limit for aggregate renewable generation contained in Proposed FIT. If the Commission establishes and maintains such a feed-in tariff, the implied returns demanded by investors should decline over time as costs of capital decline over time because investors perceive diminished policy risks over time.

C. What information should the Commission use to determine the initial FIT rates (e.g. based only on Hawaii-specific information, based on adjusted mainland information or based on European FITs)?

To determine the initial FIT rates, the Commission should use: (1) information about PPA rates that have proven sufficient to induce investment in renewable energy projects in Hawaii (such as the PPA rates for the PV projects developed by Hoku Solar to provide solar electricity to the Airports Division of the Hawaii Department of Transportation); (2) information about PPA and FIT rates that have proven sufficient to induce investment in renewable energy projects on the mainland United States and Puerto Rico; and (3) information about FIT rates that have proven sufficient to induce investment in renewable energy projects in places such as Europe, Canada, Brazil and the Caribbean.

D. If the Commission decides to calculate FIT rates based on cost and performance information, who should gather and analyze Hawaii-specific cost information (e.g. HECO or an independent consultant)?

If the Commission decides to calculate FIT rates based on cost and performance information, the Commission should gather and analyze Hawaii-specific cost information, possibly with the help of an independent consultant.

E. If the Commission decides to calculate FIT rates based on cost and performance information, what formula (e.g. the DCF formula proposed by HECO) should be used to determine FIT rates?

To determine FIT rates, the Commission should use information about PPA and FIT rates that have proven successful in Hawaii and elsewhere in attracting investment in large-scale

renewable generation, and then use discounted cash flow analysis based on cost and performance information to determine the likely cost-effectiveness of the proposed FIT rates.

- F. If the Commission adopts a tiered approach (i.e., non-complicated projects receive an FIT rate and simplified processes while complicated projects receive an FIT rate and non-simplified processes), as discussed in the FIT hearing, should the IRS studies be mandatory for large but not small projects?**

No. IRS studies should not be mandatory for any projects on the basis of project size. IRS studies should be required only for projects where the utility and/or the developer has a reasonable basis for believing that interconnection of the project would create a non-trivial risk to the safety or reliability of the grid.

- 1. Should the utility pay for any IRS studies for small projects?**

No. The utility should not pay for IRS studies for small projects. The Commission may consider opening a new docket to investigate the allocation of interconnection costs, including the costs of IRS studies, between the utility and independent project developers.

- 2. Should the utility pay for any IRS studies for large projects?**

No. The utility should not pay for IRS studies for large projects. The Commission may consider opening a new docket to investigate the allocation of interconnection costs, including the costs of IRS studies, between the utility and independent project developers.

- 3. Should the utility pay for, or compensate through FIT rates, any project-side modifications and/or additional requirements resulting from the IRS study for small projects?**

No. The utility should not pay for, or compensate through FIT rates, any project-side modifications and/or additional requirements resulting from IRS studies for small projects. The Commission may consider opening a new docket to investigate the allocation of interconnection costs, including the costs of project-side modifications and/or additional requirements resulting from IRS studies for small projects, between the utility and independent project developers.

- 4. Should the utility pay for, or compensate through FIT rates, any project-side modifications and/or additional requirements resulting from the IRS study for large projects?**

No. The utility should not pay for, or compensate through FIT rates, any project-side modifications and/or additional requirements resulting from IRS studies for large projects. The Commission may consider opening a new docket to investigate the allocation of interconnection costs, including the costs of project-side modifications and/or additional requirements resulting from IRS studies for large projects, between the utility and independent project developers.

G. How should the FIT rates consider accelerated depreciation?

The FIT rates should not consider accelerated depreciation because accelerated depreciation has little value other than to certain kinds of investors (widely-held C corporations and recipients of net passive income) that are not limited by US passive activity rules.

H. How should the FIT rates consider state tax credits?

The FIT rates should not be discounted to reflect Hawaii state tax credits.

I. Should FIT projects be eligible to receive non-tax benefits from state or utility programs (e.g. rebates)?

Yes. An FIT project should be eligible to receive non-tax benefits such as rebates from state or utility programs if the project qualifies under the terms of those programs.

J. Should the FIT rates for new projects automatically adjust for changes in federal or state tax credits?

No. FIT rates for new projects should not be automatically adjusted for changes in federal or state tax credits because the actual financial effects of such changes might depend on subjective interpretations of the law. Creating a set of automatic adjustments for such changes would likely be a complex task because the actual financial effects of such changes would be difficult to predict at any time before the changes come into effect.

K. Should the FIT assume any residual value for the projects at the conclusion of the FIT?

No. For purposes of setting the FIT rate, the FIT should not assume any residual value for the projects at the conclusion of the FIT because any assumption by the Commission about residual value twenty years in the future would be speculative.

1. How should the Commission determine any residual value for the projects at the conclusion of the FIT?

The Commission should not determine any residual value for the projects at the conclusion of the FIT because any determination by the Commission of residual value twenty years in the future would be speculative.

2. How should projects be compensated for energy sales after expiration of their FIT term if FIT rates include, or exclude, an imputed residual value? Should the Commission address this issue now, or later?

Projects should be compensated for energy sales after the expiration of their FIT terms according to whatever terms of sale might be negotiated between the utility and the project owner at the time of such expiration, regardless of whether FIT rates include or exclude an imputed residual value, because the projects are the property of the owner and developed at the risk of the owner, who is entitled to whatever value (including compensation for energy sales)

that might be obtained from ownership of the projects after expiration of the FIT term. Any compensation for any such energy sales under a negotiated power purchase agreement made twenty years in the future should be addressed by the Commission when the Commission reviews such an agreement twenty years in the future.

L. Should the initial FIT rates be time-differentiated?

The initial FIT rates should not be time-differentiated because time-differentiation of FIT rates, in the absence of a well thought-out system of time-differentiated rates applicable to all energy purchases by the utility, would be likely to add to the complexity and impair the cost-effectiveness of the FIT.

M. Should different FIT rates be created for each island?

Different FIT rates for each island should be created for PV solar and CSP, and should not be created for other renewable energy technologies, as shown in Proposed FIT.

N. How should initial FIT rates account for reliability benefits or lack thereof from certain projects?

Initial FIT rates for renewable generation should not account for reliability benefits or lack of such benefits from certain projects and/or technologies because reliability benefits are a return to the utility and ratepayers, not to the project developer. If the Commission wants to encourage especially rapid development of firm or dispatchable renewable generation projects that provides reliability benefits, the Commission may set initial FIT rates which incorporate a premium for technologies and project sizes that provide such reliability benefits. The Commission may also consider setting an initial FIT rate for energy storage technologies to induce the development of energy storage projects that may provide such reliability benefits, as shown in the Proposed FIT which establishes an FIT for "Energy Storage Facilities."

O. How should FIT projects be compensated for curtailment?

Under the Proposed FIT, projects should be compensated at FIT rates for all renewable energy that would have been generated and delivered to the utility but for curtailment.

P. What baseline rates, if any, should the Commission provide for technologies without FIT rates?

For non-commercially viable technologies, the Commission should provide a baseline FIT rate equal to the lowest of the FIT rates for commercially proven technologies having their own FIT rates.

Q. How should the FIT rates account for inflation?

FIT rates should not account for inflation. FIT rates should be levelized over the twenty year FIT term. It is up to the project investor to decide whether the levelized FIT rate provides an adequate return based on the investor's inflation expectations.

R. When, if ever, should the FIT rates adjust mid-course for existing FIT projects (e.g. increases in curtailment or input costs)?

FIT rates should not be adjusted mid-course for existing FIT projects, with the possible exception of *force majeure* circumstances that include currency hyperinflation.

V. Process and non-rate terms

A. What should be the duration of the utility's obligation to buy under the FIT?

The duration of the utility's obligation to buy renewable energy under the FIT should be twenty years commencing with initial delivery of renewable energy to the utility.

B. When should the Commission first update the initial FIT, for application to future projects?

The Commission should first update the initial FIT on the second anniversary of the initial FIT, for application of the FIT to future projects.

C. After the first update, on what intervals should the Commission reexamine the FIT?

After the first update, the Commission should re-examine the FIT at intervals of three years.

D. In what situations, if any, should parties be able to petition for changes in the FIT between these previously scheduled reexaminations?

The Commission might consider allowing the parties to petition for changes in the FIT between re-examinations based on *force majeure* or extraordinary circumstances such as currency hyperinflation.

E. What cost and performance information should the Commission require that project developers provide for FIT projects?

The Commission should require that project developers provide information about the capital and operating costs of the project, and the kilowatt-hours of renewable energy generated by the project or that would have been generated by the project but for curtailment.

F. Concerning existing PPAs, for projects that do not switch to the FIT program: What, if any, compensation should they receive for curtailment, (a) arising from the introduction of FITs or (b) that would have occurred without introduction of the FITs? Does this question belong in this FIT case or does it belong in a case initiated by a project owner for revision of its existing PPA?

For existing PPA projects that do not switch to FIT rates, such projects should receive whatever compensation, if any, that is provided in the existing PPAs. Distinguishing curtailment

arising from introduction of FITs, from curtailment that would have occurred without the introduction of FITs, would likely be a complex and contentious task. This question does not belong in this FIT case, but might belong in a case initiated by a project owner seeking revision of its existing PPA.

G. What queuing and interconnection processes should the utility utilize?

The utility should utilize an interconnection queuing process modeled after the first-ready, first-served queuing process of the Midwest ISO.

H. Should the Commission provide queuing priority for projects with reliability benefits?

No. The Commission should not provide queuing priority for projects with reliability benefits because reliability is a benefit for the utility and ratepayers, not a benefit for the project developer. Queuing priority should benefit project developers whose projects achieve milestones for rapid project development. If the Commission wants to encourage especially rapid development of firm or dispatchable renewable generation projects that provides reliability benefits, the Commission might set initial FIT rates which incorporate a premium for technologies and project sizes that provide such reliability benefits.

I. Who should receive the value of RECs or other green attributes from FIT projects? How should an FIT rate reflect the answer to this question?

The project owner should receive the value of RECs or other green attributes from FIT projects because the project owner who took the risk in developing the renewable energy project is entitled to the rewards of the project, including the value of any environmental credits associated with the project in any market set up for the exchange of such credits. FIT rates might be reduced to reflect the value of RECs to a FIT project owner, but the value of RECs in Hawaii is *de minimus* because such RECs are not currently exchanged in Hawaii and because the Commission's order in the Renewable Portfolio Standard docket established a \$20/MWh penalty that establishes an upper bound on the value of RECs to Hawaii's utilities.

J. Should prospective FIT-eligible projects have the right to apply for negotiated PPAs?

Yes. Prospective FIT-eligible projects should have the right to apply to the utility for negotiated PPAs, but as a practical matter an FIT such as the Proposed FIT may prove more attractive to developers.

K. What, if any, cost recovery assurance or other compensation should the utility receive in conjunction with the FIT?

The utility should be assured of cost recovery for its FIT renewable energy purchases (including payments for renewable energy that would have been generated and delivered to the utility but for curtailment), but cost recovery by the utility should not be a condition precedent

for FIT payments to renewable generators or for enforceability of FIT contracts by renewable generators.

L. How should FIT costs be allocated between the HECO subsidiaries (and their ratepayers)?

FIT costs should be allocated between the HECO subsidiaries and their ratepayers based on the FIT energy purchases made by such subsidiaries.

M. Should the Commission explicitly reserve a right to at least temporarily halt the FIT program due to reliability or economic conditions that arise?

No. Reservation of a right to halt the FIT due to reliability or economic conditions would eliminate the interconnection certainty (for projects meeting the utility's interconnection requirements) and the price and revenue certainty that make the FIT an effective policy for encouraging rapid development of large-scale renewable generation at low cost to the ratepaying public.

N. Should net metering be available for FIT-eligible projects?

Yes. Net energy metering ("NEM") should be available for FIT-eligible projects if the project is also eligible for net energy metering. A customer-generator eligible for both FIT and NEM should have a one-time choice between FIT and NEM at the time that the project is placed in service.

O. Should the FIT be a contract or a tariff?

The FIT should be a tariff specifying, among other things, the utility's obligation to enter into a contract providing, among other things, for the utility's purchase of renewable energy at FIT rates and having the form attached as an exhibit to the FIT.

P. Should FIT participants assume an obligation to sell power to the utility at FIT rates for the duration of the FIT term?

No. An obligation to sell renewable energy to the utility at FIT rates for the duration of the FIT term is unnecessary because the loss of revenue from a failure by the FIT participant to deliver renewable energy to the utility is penalty enough to ensure deliveries and sale of such energy to the utility at FIT rates for the duration of the FIT term.

VI. General

- A. Does Section 269-27.2(b), HRS, empower the Commission to establish a set of feed-in tariffs that compel the utility to offer to purchase power from nonfossil producers at rates, terms and conditions established by the Commission, even if those rates, terms and conditions differ from those proposed by the utility in this proceeding?**

Yes. Section 269-27.2(b) authorizes the Commission to direct public utilities to acquire electricity generated from non-fossil fuel sources. This broad mandate may be reasonably construed to allow the Commission to establish rates, terms and conditions for such purchases that are the same or differ from those proposed by the HECO Companies in this proceeding.

- B. Does the Commission have authority to mandate that the utility procure a particular quantity of nonfossil electricity, exceeding the statutory RPS requirements? Can the Commission establish deadlines? What statutes grant this authority?**

Yes. The Commission has authority to mandate that the utility procure a particular quantity of nonfossil electricity, exceeding the statutory RPS requirements, pursuant to HRS § 269-94, which states that the Commission “may provide incentives to encourage electric utility companies to exceed their renewable portfolio standards or to meet their renewable portfolio standards ahead of time, or both.” *Id.* The Commission may have authority to establish deadlines for such procurement pursuant to HRS § 269-27.2(b) and HRS § 269-6(b).

- C. Is the Energy Agreement legally binding on any one? In what way? Who could sue whom for noncompliance?**

It is unclear whether the Energy Agreement is legally binding on the signatories or third parties. The January 28, 2008 Memorandum of Understanding Between the State of Hawaii and the U.S. Department of Energy (“HCEI MOU”) states that the HCEI MOU is:

for strictly internal management use of each of the parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of either party. This MOU and the attached Appendix shall not be construed to provide a private right or cause of action for or by any person or entity.

Id. at 3 (emphasis added). Similarly, the Energy Agreement provides that if there is a “substantive breach” by any party or parties to the agreement, other parties are not bound by any unexecuted provisions of the agreement and may change their position on any dockets pending before the Commission. *Id.* at 44.

D. Does the Commission have authority to adopt FITs in this proceeding without having completed a proceeding on Clean Energy Scenario Planning?

Yes. Blue Planet is not aware of any statute, regulation or order requiring the Commission to complete a Clean Energy Scenario Planning proceeding prior to a Commission decision in this proceeding.

E. Under a FIT regime, will there still be a need for a contract between seller and the utility buyer? What form would these written contracts take? What seller obligations should these contracts cover?

Under a FIT regime, a contract between seller and utility buyer is not necessary, but may be useful for specifying all material aspects of the legal relationship between seller and utility buyer. These written contracts generally would take the form of the Schedule FIT Agreement attached as Appendix I to the Straw Tariff and modified to conform to Proposed FIT. These contracts generally should cover the seller obligations contained in the HECO Companies' Schedule FIT Agreement as modified to conform to Proposed FIT.

F. Assuming there are contracts associated with FIT sales, what is the Commission's statutory obligation to review these contracts? What are effective procedures to expedite Commission review?

The Commission has a statutory obligation to review contracts associated with FIT sales to ensure that the terms of such contracts, including the FIT rates, are just and reasonable and in the public interest. The Commission may consider appointing a third party reviewer to expedite Commission review of these contracts.

VII. Cost

A. Does HRS § 269-27.2 impose any limit on total cost?

No. HRS § 269-27.2 does not impose any limit on total cost.

For example:

- 1. Does the phrase "maximize the reduction in fossil fuels" in Section 269-27.2(b) allow the Commission to establish a quantity goal, determine the rate necessary to satisfy that goal, and impose that rate regardless of how high the rate is and regardless of total cost?**

It is unclear whether the phrase "maximize the reduction in fossil fuels" in HRS § 269-27.2 allows the Commission to establish a quantity goal and determine the rate necessary to satisfy that goal regardless of how high the rate is and regardless of total cost. The costs of that rate must be just and reasonable in relation to the benefits of that rate.

- 2. Does the "maximize" phrase mandate that result?**

No.

3. **If you believe the "maximize" phrase mandates that result, what effect does the discretionary term "may" have on the Commission's obligation?**

Blue Planet does not believe that the "maximize" phrase mandates that result.

4. **Can the Commission determine a required quantity for the utility to purchase, and then set the rate at whatever level is necessary to attract that quantity? Would such a rate necessarily satisfy the just and reasonable standard?**

It is unclear whether the Commission may determine a required quantity for the utility to purchase. The Commission may not set the rate at whatever level is necessary to attract that quantity if that rate is not just and reasonable to the ratepaying public. Such a rate would not necessarily satisfy the just and reasonable standard, but would satisfy the just and reasonable standard if the benefit of the quantity purchased was just and reasonable in relation to the purchase cost at that rate.

- B. **Regardless of any statutory limit on cost, does the Commission have authority to establish a dollar limit on the cost of utility acquisition of nonfossil electricity pursuant to an FIT? What statutes grant this authority?**

It is unclear whether the Commission has statutory authority to establish a dollar limit on the cost of utility acquisition of nonfossil electricity pursuant to an FIT. Such authority may be found in HRS § 269-27.2 and HRS § 269-6(b).

- C. **Does this authority to establish a dollar limit apply only to acquisition above the quantities required by the RPS statute?**

It is unclear whether any statutory authority to establish a dollar limit on the cost of utility acquisition of nonfossil electricity pursuant to an FIT would apply only to acquisition above the quantities required by the RPS statute.

VIII. Sellers' Legal Rights

A. PURPA

1. **Does a nonfossil developer have an existing statutory right, under state law or PURPA, to a negotiated PPA? If so, does that right continue even if the Commission establishes FITs that constitute utility offers to buy at a stated rate, or can the Commission make the FIT the exclusive means by which nonfossil producers sell to the utility? Put another way, if there is a FIT applicable to a particular seller, may the Commission authorize (or forbid) the utility to negotiate a PPA on terms that vary from the FIT?**

A nonfossil developer likely has an existing statutory right under PURPA to a negotiated PPA, but does not have a right under PURPA to a negotiated PPA that would give the nonfossil

developer a profit or positive return on its investment in the project. The existing statutory right under PURPA likely continues even if the Commission establishes FITs that constitute utility offers to buy at a stated rate. It is unclear whether the Commission can make the FIT the exclusive means by which nonfossil producers sell to the utility. If there is a FIT applicable to a particular seller, the Commission may authorize and may not forbid the utility to negotiate a PPA on terms that vary from the FIT. Importantly, the utility's right to negotiate such a PPA does not alter the utility's obligation to purchase renewable energy from an eligible seller under the FIT if the seller does not want to negotiate such a PPA with the utility.

- 2. Can the Commission substitute a FIT for Schedule Q, as a means of complying with PURPA? What type of issuance from the Commission would be necessary to demonstrate PURPA compliance?**

It is unlikely that the Commission may substitute a FIT for Schedule Q as a means of complying with PURPA.

B. Does HRS § 269-27.2 create any legal rights in sellers of nonfossil power?

For example:

- 1. Does the phrase "just and reasonable rate" in HRS § 269-27.2(c) mean "just and reasonable" to the seller, or only "just and reasonable" to the consumer? That is, does the phrase "just and reasonable rate" allow a seller to contest a Commission-established FIT on the grounds that the rate is too low or that non-rate terms and conditions are unfavorable?**

The phrase "just and reasonable rate" in HRS § 269-27.2(c) likely means "just and reasonable" to the ratepaying public, not "just and reasonable" to the seller. It is unclear whether the phrase "just and reasonable rate" allows a seller to contest a Commission-established FIT on the grounds that the rate is too low or that non-rate terms and conditions are unfavorable.

- 2. On what specific grounds could the seller contest the rate? That the rate produces a return on equity too low to attract sellers? How would the seller prove this case, to the Commission and to reviewing courts? What data would the Commission have to rely on to insulate its rate decision from judicial reversal? What evidentiary burden does the seller have, to supply facts to the Commission so that the Commission has the necessary factual support for its decision?**

It is unclear on what specific grounds the seller could contest the FIT rate; whether the seller could contest the FIT rate on the grounds that the FIT rate produces a return on equity too low to attract sellers; how a seller would prove such a case to the Commission and to reviewing courts; or what evidentiary burden the seller has, to supply facts to the Commission, so that the Commission has the necessary factual support for its decision. The data the Commission would have to rely on to insulate its decision from judicial reversal is likely equivalent to data and information deemed to satisfy the "substantial evidence" standard under Hawaii law.

3. **If the Commission declined to establish any FIT rates, but instead authorized the utility to self-produce or purchase renewables as the utility deems appropriate, would the sellers have any legal claim against the utility or the Commission? If the answer is no, then do the sellers have any legal right to contest a Commission-established FIT?**

It is unclear whether the sellers would have any legal claim against the utility or the Commission if the Commission declined to establish any FIT rates, but instead authorized the utility to self-produce or purchase renewables as the utility deems appropriate.

- C. **Assuming the Commission establishes FITs, may the Commission authorize (or forbid) sellers with existing PPAs to terminate the PPA and enter into an agreement under the FIT? Under what conditions? With what Commission involvement?**

It is unclear whether the Commission may authorize or forbid sellers with existing PPAs to terminate their PPAs and enter into agreements under the FIT. Authority to do so may be found in HRS § 269-27.2 and HRS § 269-6(b).

- D. **Hawaii statutes prohibit undue discrimination in the provision of utility service. How does that prohibition apply in the context of FITs?**

Blue Planet believes that the statutory prohibition of undue discrimination in the provision of utility service does not apply in the context of FITs because FITs apply to the acquisition of renewable energy by the utility, not the provision of utility service to utility customers.

For example:

1. **Can there be different rates for different technologies/sizes/islands: What factual differences are necessary to justify rate differences?**

Yes. There can be different rates for different technologies, different project sizes, or different islands. Factual differences necessary to justify rate differences might include different costs for different technologies, different project sizes, or different islands.

2. **Can there be negotiated PPAs that make use of FIT rates but that vary from each other in other terms and conditions?**

Yes. There can be negotiated PPAs that make use of FIT rates and vary from each other in other terms and conditions, but this possibility does not alter the utility's obligation to enter into the form of Schedule FIT Agreement attached as an exhibit to the FIT and conforming to Proposed FIT if the seller does not want to negotiate a PPA with the utility that varies the terms and conditions of such form of Schedule FIT Agreement.

3. Can there be a negotiated PPA for projects that qualify under the scope of an existing FIT?

Yes. There can be a negotiated PPA for a project that qualifies under the scope of an existing FIT, but this possibility does not alter the utility's obligation to enter into the form of Schedule FIT Agreement attached as an exhibit to the FIT and conforming to Proposed FIT if the seller does not want to negotiate a PPA with the utility for the project that qualifies under the scope of the existing FIT.

IX. Utility Role

- A. Does the Commission have the power to restrict the utility's ability to build its own nonfossil generation, such as requiring the utility to refrain from building whenever there is a viable independent seller offering to sell? What findings must the Commission make to support such a restriction?**

It is unclear whether the Commission has the power to restrict the utility's ability to build its own nonfossil generation, and what findings the Commission must make to support such a restriction.

- B. Same question as above, but applied to a utility affiliate selling renewable energy to another utility affiliate.**

It is unclear whether the Commission has the power to restrict a utility affiliate's ability to build its own nonfossil generation and sell renewable energy from such generation to another utility affiliate, and what findings the Commission must make to support such a restriction.

SCHEDULE FIT

Feed-in Tariff – Purchases from Renewable Energy Facilities

Definitions:

For the purposes of this Schedule:

- (1) "Biogas" means a gaseous fuel produced by anaerobic decomposition of organic matter.
- (2) "Biomass" means aquatic or terrestrial plant material, vegetation, or agricultural waste, originating in the State of Hawaii, used as a fuel or energy source.
- (3) "Company" means Hawaiian Electric Company, Inc.
- (4) "Concentrating Solar Power Facility" means a Renewable Energy Generating Facility that generates electricity by concentrating Solar Radiation to heat a working fluid that drives a generator.
- (5) "Electrical Capacity" means the installed maximum potential alternating-current electricity generating capacity, in kilowatts, of a Renewable Energy Generating Facility.
- (6) "Energy Storage Facility" means any identifiable facility, plant, installation, project, equipment, apparatus, or the like, located in the State of Hawaii, placed in service after the effective date of this Schedule, and that stores Renewable Energy generated from a Renewable Energy Source, including battery systems, pumped storage, and distributed and virtual storage.
- (7) "Energy Source" means a Renewable Energy Source or Stored Energy.
- (8) "Hybrid Facility" means a Renewable Energy Generating Facility that generates electricity from two or more Renewable Energy Sources, or a Renewable Energy Facility comprised of a Renewable Energy Generating Facility and an Energy Storage Facility.
- (9) "Hydropower" means the energy of moving water, including wave energy, ocean thermal energy conversion, and tidal energy.
- (10) "Non-Wood-Burning Generating Facility" means a Renewable Energy Generating Facility that generates electricity from Biomass and that is not a Wood-Burning Generating Facility.

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EXHIBIT B

- (11) "Offshore Wind Generating Facility" means a Wind Generating Facility that is located in an ocean water depth of at least 20 meters.
- (12) "Onshore Wind Generating Facility" means any Wind Generating Facility that is not an Offshore Wind Generating Facility.
- (13) "Photovoltaic Generating Facility" means a Renewable Energy Generating Facility that generates electricity from unconcentrated Solar Radiation.
- (14) "Renewable Energy" means Renewable Source Energy or Stored Energy.
- (15) "Renewable Energy Facility" means a Renewable Energy Generating Facility or an Energy Storage Facility.
- (16) "Renewable Energy Generating Facility" means any identifiable facility, plant, installation, project, equipment, apparatus, or the like, located in the State of Hawaii, placed in service after the effective date of this Schedule, and that generates Renewable Energy from a Renewable Energy Source.
- (17) "Renewable Energy Generator" means any person that owns, controls, operates, manages, or uses a Renewable Energy Generating Facility to generate Renewable Energy from a Renewable Energy Source.
- (18) "Renewable Energy Provider" means a Renewable Energy Generator or a Stored Energy Provider.
- (19) "Renewable Energy Source" means the following sources of energy:
 - (a) Biomass;
 - (b) Biogas;
 - (c) Geothermal Energy;
 - (d) Landfill Gas;
 - (e) Sewage Treatment Plant Gas;
 - (f) Hydropower;
 - (g) Solar Radiation;
 - (h) Wind.
- (20) "Renewable Source Energy" means electricity generated by a Renewable Energy Generating Facility from a Renewable Energy Source.
- (21) "Storage Capacity" means the installed maximum potential energy storage capacity, in kilowatt-hours, of an Energy Storage Facility.
- (22) "Stored Energy" means energy stored in an Energy Storage Facility.

- (23) "Stored Energy Provider" means any person that owns, controls, operates, manages, or uses an Energy Storage Facility to store Renewable Energy generated from a Renewable Energy Source.
- (24) "Wood-Burning Generating Facility" means a Renewable Energy Generating Facility that burns wood to generate electricity.
- (25) "Wind Generating Facility" means a Renewable Energy Generating Facility that generates electricity from Wind.

Interconnection

At the request of a Renewable Energy Provider that places a Renewable Energy Facility in service, the Company shall interconnect such Renewable Energy Facility to the electric system of the Company, provided that technical requirements set forth in the Company's Rules relating to interconnection of generating or storage facilities with the Company's electric system, as approved by the Public Utilities Commission, are met. Costs incurred to meet technical requirements of interconnection of a Renewable Energy Generating Facility shall be allocated in the manner set forth below under "Interconnection Costs." Each of the Company and the Renewable Energy Provider shall disclose to the other, within 6 weeks of a request by the other, any and all data, relating to the electric system of the Company or the Renewable Energy Facility of the Renewable Energy Provider, necessary to plan and execute such interconnection in conformity with such technical requirements.

A Renewable Energy Facility shall be designed to operate in parallel with the Company's electric system without adversely affecting the operations of its customers and without presenting safety hazards to personnel of the Company or its customers. The Renewable Energy Provider shall furnish, install, operate and maintain facilities such as relays, switches, synchronizing equipment, monitoring equipment and control and protective devices designated by the Company and specified in the standard Schedule FIT Agreement ("Schedule FIT Agreement") as suitable for parallel operation with the electric system of the Company. The Renewable Energy Facility and systems interconnecting the Renewable Energy Facility with the Company's electric system must be in compliance with all applicable safety and performance standards of the National Electric Code (NEC), the Institute of Electrical and Electronics Engineers (IEEE), and the Company's requirements for distributed generation or storage interconnected with the Company's electric system as provided in the Company's Rules, and subject to any other requirements, including payments, as provided in the Schedule FIT Agreement.

Requests to interconnect a Renewable Energy Facility in parallel with the Company's electric system will be processed in accordance with the procedures in Appendix II.

Interconnection Costs

	Tier 1	Tier 2	Tier 3
	Electrical Capacity (kW)		
Oahu	1 - 500 kW	501-1000 kW	> 1000 kW
Maui & Hawaii	1 - 250 kW	251-500 kW	> 500 kW
Lanai & Molokai	1 - 100 kW	101-250 kW	251 - 500 kW
	Interconnection Features and Standards		
Voltage Regulation	None	None	Yes
Frequency Regulation	None	None	Yes
SCADA	None	None	Yes
	Allocation of Interconnection Costs		
Interconnection Review Study (IRS) Costs	Company	Company	Renewable Energy Provider
System and feeder studies and technology verification studies performed by the utility	Company	Company	Company
Project risk assessment costs including costs associated with curtailment studies	Company	Company	50% Company; 50% Renewable Energy Provider
Line extension and transformation	Renewable Energy Provider	Renewable Energy Provider	Renewable Energy Provider

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equipment specific to the project			
Substation specific to the project	Company	Company	Company
Equipment installed at the customer site specific to the project	Renewable Energy Provider	Renewable Energy Provider	Renewable Energy Provider
SCADA, control system, and curtailment system specific to the project	Company	Company	Renewable Energy Provider
Utility system costs and upgrades	Company	Company	Company

Schedule FIT Agreement:

The Company shall offer a Schedule FIT Agreement, in the form provided in Appendix I, to any Renewable Energy Provider that requests interconnection of a Renewable Energy Facility to the electric system of the Company under this Schedule. Each such Schedule FIT Agreement shall oblige the Company to purchase and pay for all Renewable Energy generated or stored by the Renewable Energy Facility and delivered to the electric system of the Company, and to purchase and pay for all Renewable Source Energy that would be generated by a Renewable Energy Generating Facility and delivered to the electric system of the Company but for curtailment by the Company of generation or delivery of Renewable Source Energy by the Renewable Energy Generating Facility.

Each such Schedule FIT Agreement shall oblige the Company to purchase and pay for all such Renewable Energy at the feed-in tariff rate of compensation (in cents per kilowatt-hour) set forth in this Schedule. The Company shall compensate the Renewable Energy Provider for such Renewable Energy in an amount no less than the number of kilowatt-hours of such Renewable Energy multiplied by such rate of compensation.

With respect to Renewable Energy generated by a Hybrid Facility and delivered to the electric system of the Company, each such Schedule FIT Agreement shall oblige the Company to take all such Renewable Energy, and shall oblige the Company to purchase and pay for such Renewable Energy at the feed-in tariff rate of compensation (in cents per kilowatt-hour) set forth in this Schedule for each Energy Source from which such Renewable Energy is delivered.

Procedures for requesting and executing a Schedule FIT Agreement are provided in Appendix II to this Schedule.

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Metering:

The Company, at its expense, shall install a meter to record the flow of Renewable Energy delivered to the electric system of the Company. The Renewable Energy Provider shall, at its expense, provide, install and maintain all conductors, service switches, fuses, meter sockets, meter instrument transformer housing and mountings, switchboard meter test buses, meter panels and similar devices required for service connection and meter installations on the premises of the Renewable Energy Facility in accordance with the Company's Rules.

Any energy delivered to a Renewable Energy Provider by the Company will be metered separately from any Renewable Energy delivered by the Renewable Energy Provider to the Company, either by use of multiple meters or a meter capable of separately recording the net inflow and outflow of electricity.

Purchase of Renewable Energy Delivered by a Renewable Energy Provider to the Company:

The Company shall pay for each kilowatt-hour ("kWh") of Renewable Energy delivered to the Company by a Renewable Energy Provider as follows.

Renewable Energy Source: Biomass	
Wood-Burning Generating Facility Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 150 kW	
> 150 kW and ≤ 500 kW	
> 500 kW and ≤ 5000 kW	
> 5000 kW	

Renewable Energy Source: Biomass	
Non-Wood-Burning Generating Facility Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 150 kW	
> 150 kW and ≤ 500 kW	
> 500 kW and ≤ 5000 kW	
> 5000 kW	

Renewable Energy Source: Biogas	
Renewable Energy Generating Facility Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 150 kW	
> 150 kW and ≤ 500 kW	

> 500 kW and ≤ 5000 kW	
> 5000 kW and ≤ 20000 kW	

Renewable Energy Source: Geothermal Energy	
Renewable Energy Generating Facility Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 10000 kW	
> 10000 kW	

Renewable Energy Source: Landfill Gas or Sewage Treatment Plant Gas	
Renewable Energy Generating Facility Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 500 kW	
> 500 kW and ≤ 5000 kW	

Renewable Energy Source: Hydropower	
Renewable Energy Generating Facility Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 500 kW	
> 500 kW and ≤ 2000 kW	
> 2000 kW and ≤ 5000 kW	
> 5000 kW and ≤ 10000 kW	
> 10000 kW and ≤ 20000 kW	
> 20000 kW and ≤ 50000 kW	
> 50000 kW	

Renewable Energy Source: Solar Radiation	
Photovoltaic Generating Facility Located on Oahu Electrical Capacity (kW)	Feed-in Tariff Rate (¢/kWh)
≤ 10 kW	
≥ 10 kW and ≤ 100 kW	
≥ 100 kW and ≤ 500 kW	
≥ 500 kW and ≤ 5000 kW	
≥ 5000 kW	

Renewable Energy Source: Solar Radiation	
Photovoltaic Generating Facility Located on Maui <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 10 kW	
≥ 10 kW and ≤ 100 kW	
≥ 100 kW and ≤ 500 kW	
≥ 500 kW and ≤ 5000 kW	
≥ 5000 kW	

Renewable Energy Source: Solar Radiation	
Photovoltaic Generating Facility Located on Molokai <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 10 kW	
≥ 10 kW and ≤ 100 kW	
≥ 100 kW and ≤ 500 kW	
≥ 500 kW and ≤ 5000 kW	

Renewable Energy Source: Solar Radiation	
Photovoltaic Generating Facility Located on Lanai <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 10 kW	
≥ 10 kW and ≤ 100 kW	
≥ 100 kW and ≤ 500 kW	
≥ 500 kW and ≤ 5000 kW	

Renewable Energy Source: Solar Radiation	
Photovoltaic Generating Facility Located on Hawaii <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 10 kW	
≥ 10 kW and ≤ 100 kW	
≥ 100 kW and ≤ 500 kW	
≥ 500 kW and ≤ 5000 kW	
≥ 5000 kW	

Renewable Energy Source: Solar Radiation	
Concentrating Solar Power Facility Located on Oahu <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 500 kW	
> 500 kW and ≤ 5000 kW	
> 5000 kW and ≤ 10000 kW	
> 10000 kW and ≤ 20000 kW	

Renewable Energy Source: Solar Radiation	
Concentrating Solar Power Facility Located on Maui <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 500 kW	
> 500 kW and ≤ 5000 kW	
> 5000 kW and ≤ 10000 kW	
> 10000 kW and ≤ 20000 kW	

Renewable Energy Source: Solar Radiation	
Concentrating Solar Power Facility Located on Molokai <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 500 kW	
> 500 kW and ≤ 5000 kW	

Renewable Energy Source: Solar Radiation	
Concentrating Solar Power Facility Located on Lanai <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 500 kW	
> 500 kW and ≤ 5000 kW	

Renewable Energy Source: Solar Radiation	
Concentrating Solar Power Facility Located on Hawaii <u>Electrical Capacity (kW)</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 500 kW	
> 500 kW and ≤ 5000 kW	
> 5000 kW and ≤ 10000 kW	
> 10000 kW and ≤ 20000 kW	

Renewable Energy Source: Wind	
Onshore Wind Generating Facility <u>Years of Agreement Term</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
Years 1 through 5	
Years 6 through 20	

Renewable Energy Source: Wind	
Offshore Wind Generating Facility <u>Years of Agreement Term</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
Years 1 through 12	
Years 13 through 20	

Energy Source: Stored Energy	
Energy Storage Facility <u>Electrical Storage Capacity</u>	<u>Feed-in Tariff Rate (¢/kWh)</u>
≤ 1000 kWh	
> 1000 kWh	

The Commission shall periodically adjust the Schedule FIT feed-in tariff rates of compensation in accordance with the procedures provided in Appendix III of this Schedule. The Renewable Energy Provider shall receive the feed-in tariff rate of compensation in effect at the time of execution of the Schedule FIT Agreement for the entire term of the Schedule FIT Agreement.

Term of Schedule FIT Agreement:

The term of the Schedule FIT Agreement will be as follows, commencing on the initial delivery of Renewable Energy under the Schedule FIT Agreement from the Renewable Energy Provider to the Company:

<u>Energy Source</u>	<u>Term of Agreement</u>
Biomass	20 years
Biogas	20 years
Geothermal Energy	20 years
Landfill Gas	20 years
Sewage Treatment Plant Gas	20 years
Hydropower	20 years
Solar Radiation	20 years
Wind	20 years
Stored Energy	20 years

Net Energy Metering

A Renewable Energy Provider that is eligible to enter into a net energy metering agreement with the Company shall have a choice of either (1) entering into a net energy metering agreement with the Company, or (2) entering into a Schedule FIT Agreement with the Company.

Penetration Limits for Intermittent Renewable Energy Sources

The obligations of the Company to interconnect a Renewable Energy Generating Facility to the Company's electric system and to offer an Schedule FIT Agreement to a Renewable Energy Generator to purchase and pay for Renewable Source Energy at a feed-in tariff rate of compensation under this Schedule shall not apply with respect to Renewable Source Energy produced by a Renewable Energy Generating Facility that is (i) a Wind Generating Facility, and that is placed in service after December 31 of the year following the year during which the aggregate Electrical Capacity of Renewable Energy Generating Facilities that are Wind Generating Facilities as to which technical requirements for interconnection have been met equals or exceeds 25 per cent of the peak demand for such electrical system, provided that the Public Utilities Commission may increase, by rule or order, such aggregate Electrical Capacity limit above 25 per cent of such peak demand, or (ii) a Photovoltaic Generating Facility or a Concentrating Solar Generating Facility, and that is placed in service after December 31 of the year following the year during which the aggregate Electrical Capacity of Renewable Energy Generating Facilities that are Photovoltaic Generating Facilities or Concentrating Solar Generating Facilities as to which technical requirements for interconnection have been met equals or exceeds 20 per cent of the peak demand for such electrical system, provided that the Public Utilities Commission may increase, by rule or order, such aggregate Electrical Capacity limit above the above-referenced 25 per cent and 20 per cent peak demands.

Aggregate Limits

The obligations of the Company to interconnect a Renewable Energy Generating Facility to the Company's electric system and to offer an Schedule FIT Agreement to a Renewable Energy Generator to purchase and pay for Renewable Source Energy at a feed-in tariff rate of compensation under this Schedule shall not apply with respect to Renewable Source Energy generated by a Renewable Energy Generating Facility that is placed in service after December 31 of the year following the year during which the aggregate Electrical Capacity of Renewable Energy Generating Facilities as to which technical requirements for interconnection have been met equals or exceeds 100 per cent of the peak demand for such electrical system, provided that the Public Utilities Commission may increase, by rule or order, such aggregate Electrical Capacity limit above 100 per cent of such peak demand.

Queuing Procedures:

Requests for interconnection of Renewable Energy Facilities under this Schedule shall be administered on a first-ready, first-to-interconnect basis, modeled after the queuing procedures adopted by the Midwest Independent Transmission System Operator, Inc. *See* Midwest Independent Transmission System Operator ("Midwest ISO"), Generator Interconnection Process Tariff (August 25, 2008) [http://www.midwestmarket.org/publish/Document/25f0a7_11c1022c619_7d600a48324a/Attachment%20X%20GIP.pdf?action=download&property=Attachment;Midwest ISO, Business Practices Manual: Generator Interconnection](http://www.midwestmarket.org/publish/Document/25f0a7_11c1022c619_7d600a48324a/Attachment%20X%20GIP.pdf?action=download&property=Attachment;MidwestISO,BusinessPracticesManual:GeneratorInterconnection) (Manual No. 15, TP-BPM-004-r2, January 6, 2009) http://www.midwestmarket.org/publish/Document/45e84c_11cdc615aa1_7e010a48324a.

Renewable Energy Certificates:

Any certificate, credit, allowance, green tag, or other transferable indicia or environmental attribute, verifying the generation of a particular quantity of energy from a Renewable Energy Source, indicating the generation of a specific quantity of Renewable Source Energy by a Renewable Energy Generating Facility, or indicating a Renewable Energy Generator's ownership of any environmental attribute associated with such generation, is the property of the Renewable Energy Generator and freely assignable by the Renewable Energy Generator.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF HAWAII

In the Matter of

PUBLIC UTILITIES COMMISSION

Instituting a Proceeding to Investigate the
Implementation Of Feed-in Tariffs.

DOCKET NO. 2008-0273

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this date a copy of the foregoing document was
duly served upon the following individuals by placing a copy of same in the United States Mail,
postage prepaid, or by electronic mail, as follows:

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